



50  
years of  
wise water

UNESCO-IHE  
Institute for Water Education



ANNUAL REPORT 2007

UNESCO-IHE is the largest postgraduate water education facility in the world and the only institution in the UN system authorised to confer accredited MSc degrees and promote PhDs.

UNESCO-IHE envisions a world in which people manage their water and environmental resources in a sustainable manner, and in which all sectors of society particularly the poor, can enjoy the benefits of basic services. The mission of UNESCO-IHE is to contribute to the education and training of professionals and to build the capacity of sector organisations, knowledge centres and other institutions active in the fields of water, the environment and infrastructure, in developing countries and countries in transition.

Since 1957 the Institute has provided postgraduate education to more than 13,500 water professionals from 162 countries, the vast majority from the developing world. More than 60 PhD candidates were promoted, and numerous research and capacity building projects were carried out throughout the world.

Alumni reach senior positions in their home countries and become nationally and internationally recognised experts in their fields of expertise. Many have made significant contributions to the development of the water and environmental sectors. UNESCO-IHE alumni have access to and remain part of a global network, consisting of alumni, guest lecturers, experts and renowned centres of knowledge, together providing a vast source of expertise to draw upon.

UNESCO-IHE centres its education, research and capacity building programmes around five themes: Water Security, Environmental Integrity, Urbanisation, Water Management and Governance, and Information and Communication Systems. Through each of these themes, the Institute focuses its contributions on resolving the major issues and challenges faced by many developing countries, as stated in the Millennium Development Goals and as identified by – among others – the UN Millennium Summit, the International Hydrological Programme, the World Water Fora, the World Summit on Sustainable Development, and the Commission on Sustainable Development.

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## RECTOR'S STATEMENT

When I reflect back to the year just passed, I can't help but think how much we accomplished in terms of our specific mission as a UNESCO post-graduate water training institute. Of course we celebrated our 50th anniversary. Among the many special activities that we hosted was a three day symposium on Water for a Changing World: Enhancing Local Knowledge and Capacity involving some 250 water professionals, leaders and politicians. Additionally, we received several hundred of our alumni during June for a gala celebration and to launch two important books on the history of the Institute: The first titled Water Education for a Changing World: Messages from Alumni in the Field includes personal reflections from among our alumni on what the Institute means to them and how it has impacted their career. The second publication: 50 Years of Wise Water: Below the Surface is a pictorial essay of the history of the Institute. Additionally, we attracted a record number of our doctoral participants to the PhD Week in which they make presentations on their research to their colleagues.

In spite of the many additional activities of 2007 associated with our anniversary, I believe we managed to not only stay 'on target' with the objectives of our work plan but also made tangible progress in meeting new mandates of the Member States. Among our many accomplishments, we completed the second medium term strategy (2008-2013) and developed a business plan for the same period. The latter document also served as the principle input to our responding to the recommendations of the external evaluation of the Institute as called for in our Statutes. Additionally, together with the Ministry for Development Cooperation, we forged a new 'programmatic' relationship that will permit us greater latitude in implementing our research and institution-building goals.

In completing this short statement I also feel compelled to note the progress that was made in further integrating the Institute into the UNESCO and UN systems. The Member States have every reason to be proud of UNESCO-IHE, and we have every reason to be gratified in our shared commitment to contribute in measurable ways along the path towards sustainable development in the water sector.



Prof. Richard A. Meganck  
Rector





### UNESCO-IHE IN NUMBERS

151 fulltime-equivalents of which 53% academic and 47% supporting staff  
4 Water and Environment Related Master Programmes with 14 specialisations  
155 new MSc participants from 79 countries  
188 MSc degrees awarded  
66 registered PhD fellows  
6 PhD graduations  
373 water sector professionals in short courses  
177 participants in 10 on-line courses  
3 refresher seminars held for alumni  
236 scientific publications  
105 capacity building projects

Total turnover of just under €25 million, overall negative result of €52,000



### EDUCATION

- Final notification received that all MSc programmes were re-accredited by NVAO until December 31, 2013
- The joint programme on Integrated Lowland Development and Management Planning with Sriwijaja University in Indonesia started in 2007
- A new online course in Ecological Sanitation was developed and offered for the first time

### RESEARCH

- The institute was awarded membership of the SENSE research school
- Within the SWITCH research project, more than 20 PhD and 30 MSc participants were active, over 70 publications/ research reports were produced, and papers were presented at many international conferences
- The Institute's publication protocol was incorporated in the Quality Management System and the Staff Development and Appraisal System
- The library substantially expanded its collection of online scientific publications



## CAPACITY BUILDING

- Total turnover of €7,9 million and fee income of €2,5 million
- A capacity building project for the water and wastewater sector in Iran was started; through training courses, study tours and workshops 2,100 Iranian professionals will be trained on water and wastewater engineering and water service management
- Agreement was reached with the Dutch Ministry for Development Cooperation to cooperate through a programmatic funding mechanism

## PARTNERSHIPS AND NETWORKING

- Institutional agreements signed with the Ministry of Water Resources of Nepal, the University of South Florida, the Asian Institute of Technology, the Asian Development Bank & Singapore Public Utilities Board, the National Water and Sewerage Corporation of Uganda, the Politechnica University Timisoara in Romania, and the Instituto Mexicano de Tecnología del Agua
- A programme for the UNESCO-IHE Global Partnership for Water Education and Research was developed
- The Asia Pacific Water Forum network of knowledge hubs was launched with support from UNESCO-IHE



## OVERALL DEVELOPMENT OF THE INSTITUTE

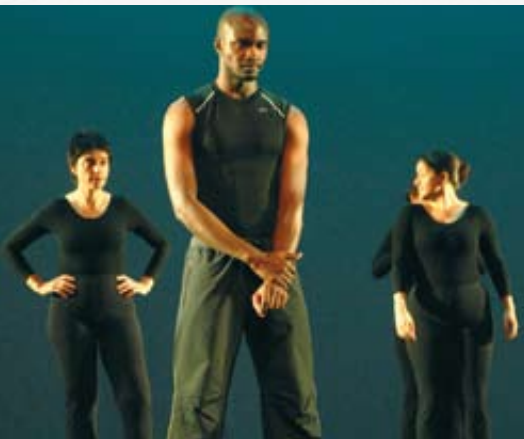
- The Institute celebrated its 50th Anniversary with a host of scientific and cultural events
- The International Symposium 'Water for a Changing World: Enhancing Local Knowledge and Capacity' was organised
- The book 'Messages from Alumni in the Field' was published, consisting of stories from alumni about their professional experiences after having completed a study at UNESCO-IHE
- The external evaluation of the Institute – commissioned by the Dutch Ministry of Education in consultation with UNESCO – was positively completed, and resulted in thirteen recommendations
- The Strategic Plan 2008-2013 and the Business Plan 2008-2013 were finalised



The UNESCO-IHE RopaRun team participates in the relay from Paris to Rotterdam - extended for the special occasion to link UNESCO's headquarters in Paris to UNESCO-IHE in Delft



Symposium visitors receive their information sets at the registration desk



DanceProject – a dance group of UNESCO-IHE participants and staff – practicing for the Gala performance



HRH Prince Willem-Alexander is received by the Institute's Rector, Prof. Meganck and Mayor of Delft van Oorschoot at the 50th Anniversary Symposium



Thematic fireworks during the evening of the annual staff's Day Out



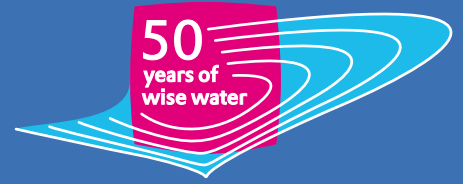
Deputy Director of UNESCO Mr. Barbosa with Yemen Minister Al-Eryani of Water Resources at the 50th Anniversary Celebrations



A group of participants enjoys the Anniversary Celebrations at the end of the symposium



Display of a selection of the photo competition's best pictures



In 2007, the Institute celebrated its 50th anniversary; 50 years contributing to the delivery of qualified professionals to deal with increasing water challenges. UNESCO-IHE celebrated its anniversary organising a series of events throughout the year involving staff, participants, partners, alumni, networks, donors, Delft's citizens and other friends of the Institute. A selection of photographs of various events is shown on the page on the left.

#### **INTERNATIONAL SYMPOSIUM WATER FOR A CHANGING WORLD: ENHANCING LOCAL KNOWLEDGE AND CAPACITY**

In the framework of its 50th anniversary, UNESCO-IHE hosted the International Symposium 'Water for a Changing World: Enhancing Local Knowledge and Capacity' on June 13-15. The objective of the symposium was to assess the priority challenges in the water sector, and to recommend principles and strategies for enhancing knowledge and capacity at the country level in order to make international development and water management more effective and sustainable.

The symposium was attended by over 250 professionals, leaders and politicians representing national and local governments, scientists, education institutions and NGOs from 56 countries, as well as UN agencies and multilateral development banks.

The three-day symposium consisted of two main parts. The first two and a half days were 'working sessions' discussing the symposium themes and objectives and draft the recommendations. The 'working sessions' of the symposium were organised as a sequence of parallel thematic working groups. Each working group session was introduced by key-note speakers who raised issues, provided information and set the scene for discussions.

The conclusions of the working groups were presented in a plenary session on the final day, during the high-profile discussion forum in celebration of the Institute's 50th anniversary. This discussion forum was chaired by HRH Crown Prince Willem-Alexander of the Netherlands, and comprised Ministers from Yemen, Indonesia, Uganda and Mozambique, as well as the Deputy Director General of UNESCO, the President of the World Water Council, and the Deputy CEO of Suez.

#### **General recommendations**

- Prioritise the local actors – build on existing local knowledge
- Raise awareness – teach water literacy
- Promote integrated approaches
- Transform organisations to make them more effective
- Reform the water sector
- Build learning networks
- Target and encourage leaders and champions
- Share information and knowledge

#### **Policy recommendations**

- Capacity and knowledge development requires long-term commitments
- Developing countries must become more independent in their own problem-solving
- Capacity and knowledge development is a goal in itself, not just a tool
- Start teaching the concepts underlying good water management and sanitation early: at primary school and beyond
- Make knowledge and capacity development more effective: understand how it works.

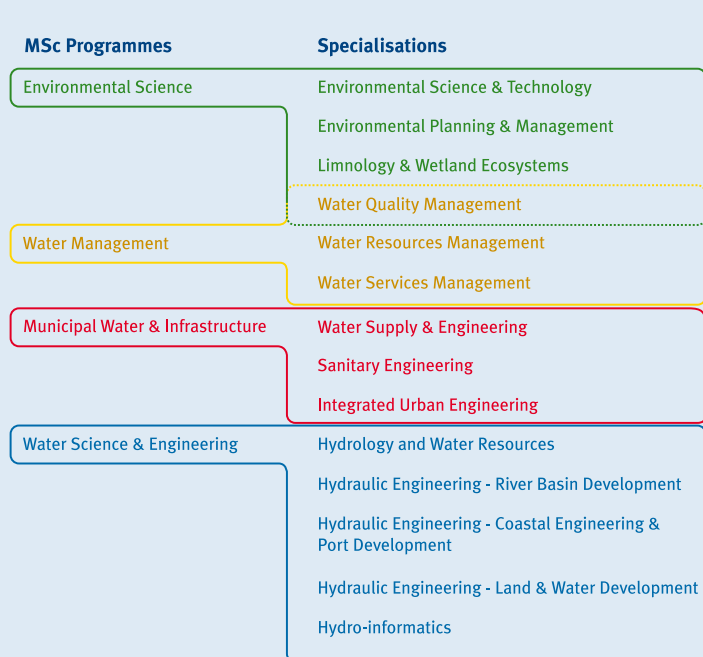






# CORE ACTIVITIES

## MASTER PROGRAMMES AND SPECIALISATIONS OFFERED IN 2007



| MSc Programmes                   | Participants<br>2006-2008 | 2007-2009  |
|----------------------------------|---------------------------|------------|
| Environmental Science            | 50                        | 39         |
| Water Management                 | 28                        | 26         |
| Municipal Water & Infrastructure | 42                        | 36         |
| Water Science & Engineering      | 82                        | 54         |
| <b>Total</b>                     | <b>202</b>                | <b>155</b> |

Degree programmes offered at UNESCO-IHE were the 18-month Master of Science (MSc) and the 4-year Doctor of Philosophy (PhD). An overview of the Master Programmes and their Specialisations are presented in the table.

The participants in UNESCO-IHE’s postgraduate programmes originated from 79 countries. In December 2007, the total number of registered participants totalled 423 for the Master of Science and PhD programmes. The total number of MSc participants is shown in the overview table. This year’s decline in numbers was due to the ending of a number of group training programmes and the postponing of new ones. More details on educational statistics are presented in Annex 1.

A further 373 participants attended UNESCO-IHE’s refresher seminars, regular and tailor-made short courses. Next to the traditional educational programmes, the Institute also trained 177 water sector professionals through its online course offerings.

During 2007 the Institute received final notification that all its degree programmes were re-accredited by the Dutch-Flemish Accreditation Organisation (NVAO) until December 31, 2013.

In 2007 much preparatory work went into the joint programme on Integrated Lowland Development and Management Planning in collaboration with Sriwijaya University in Palembang, Indonesia. This double degree master programme has a duration of two years, and the first graduates of the programme will receive their degree in October 2009.

A joint programme focusing on hydroinformatics is being developed with ITAIPU Binacional Corporation (Brasil, Paraguay), and discussions started with the Asian Institute of Technology to establish a joint master programme in Urban Water Engineering and Management. The joint Master Programme with Hohai University and the Nanjing Hydraulic Research Institute was expanded with specialisations in Coastal Engineering and Hydrology, in addition to the existing specialisation in Hydroinformatics, of which the first batch of students received their degrees in 2007.

Water Conflict Management, a new specialisation under the Masters Programme in Water Management, was developed in 2007. This specialisation will be offered for the first time in 2008, with the first participants starting in October.

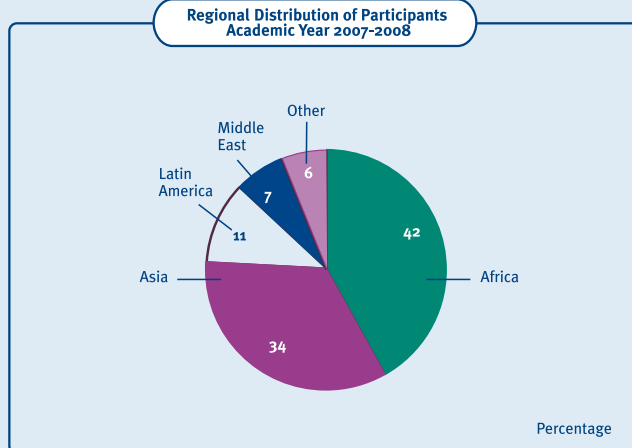
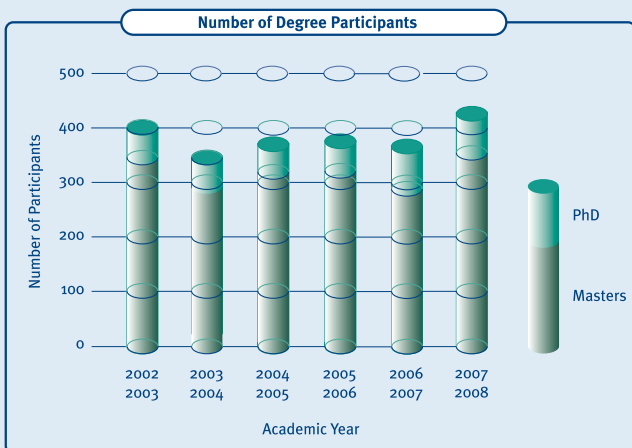
The Committee on Innovation in Education produced a report in 2007, which contains a vision of the Institute’s teaching and learning programmes. The implementation of this report - a strategy document catalysing the realisation of this vision – will be finalised in 2008. The implementation focuses on:

- Increased staff development by training academic staff in innovative didactical methods.
- Wider adoption of innovative teaching methods. This will build on existing initiatives on blended learning (distance and face-to-face) and problem-based learning.
- More flexibility in educational programmes, giving participants more options to tailor these studies in line with their needs; extending the possibility to study part-time and on-line.
- Increased partner involvement in the Institute’s educational programmes, both in development and delivery – for example through joint degree programmes.

2007 was the second year in which the Institute offered summer courses. For the first time, several of these courses were open for external participants, and were indeed attended by participants from other institutes.

A new format for the English support courses - which aid participants in improving their English language skills - was developed. Each participant is now offered the opportunity to follow a course which best suits personal needs.

At the initiative of the Institutes PhD participants, a constitution for a PhD Association Board was drafted and approved, and during the annual PhD seminar the first Board members were elected. Before this, PhD participants were represented within the Student Association Board, but now they have their own communication channel to the management of the Institute. The Student Association Board remains active, but is now limited to representing MSc participants.



Demand-driven research is an essential component of the activities that UNESCO-IHE carries out in order to fulfil its mission. The Strategic Plan 2008-2013, underscores the importance of research, and the provision of adequate resources so that the high quality of the research effort is maintained and strengthened.

The research and development activities are centred on five themes: water security, environmental integrity, urbanisation, water management and governance, and information and communication systems. An overview of themes, cores and research lines can be found in Annex 5.

In 2007, a large number of research activities were realised including many cross-departmental and cross-core projects. This research effort resulted in a steadily increasing number of publications in peer-reviewed journals, as presented in the table. During 2007, six PhD participants completed their degrees.

In 2007 UNESCO-IHE became a member of Socio-Economic and Natural Sciences of the Environment (SENSE); a Dutch research school focusing on environmental sciences in an integrated way. SENSE is accredited by the Royal Netherlands Academy of Sciences (KNAW), and brings together excellent academic research groups from eight universities. Thirteen staff members were admitted as individual members by SENSE during 2007. More staff members and PhD participants are likely to qualify in the coming years. The main advantage of this membership is that it improves the training possibilities for PhD researchers with many specialised, high-quality short-courses offered by the research groups that SENSE brings together. A stronger link to SENSE through collaboration

in the different research clusters will offer further research possibilities.

The 'publication protocol' that was developed in 2006, encouraging staff and participants to publish their scientific outputs in high impact journals, was incorporated in the Quality Management system and the Staff Development and Appraisal System (SDAS). The guidelines for publications in the latter system are in accordance with the guidelines of the SENSE research school, and will be applied from 2008 onwards.

Several research lines were given special attention during 2007. Significant progress was made in better understanding and the sustainable management of the urban water cycle (including socio-economic aspects), understanding and modelling of hydrological processes at catchment's scale, physical based modelling of water flow and sediment transport in rivers and coasts, the use of natural and artificial systems to improve water quality and reuse, environmental water allocation, and transboundary water management and conflict resolution. A new research line was initiated to study the impacts of the large scale production of bioenergy (for example biofuels and biodiesel) on water.

More than 20 PhD and 30 MSc participants started or continued their work within the SWITCH project. Over 70 publications and research reports were produced by all partners, while papers were presented at a large number of international conferences.

During 2007, UNESCO-IHE submitted a number of research proposals to the 7th framework programme of the EC. Additional new research ideas were worked out and submitted to TTI, NWO, WOTRO and other

funding agencies. These cover a wide range of topics including: anticipatory integrated water management, flood management, safe water reuse, asset management, hydrological process research at different scales and institutional arrangements for sustainable water management.

A proposal for an integrated project entitled 'In Search of Sustainable Catchments and Basin-wide Solidarities: Transboundary Water Management of the Blue Nile River Basin' was approved by NWO-WOTRO. This project, which will start in 2008, will fund three PhD participants and one Post-Doc. The research will involve two UNESCO-IHE cores (hydrology and water resources management), the International Water Management Institute IWMI, the Eastern Nile Technical Regional Office ENTRO of the NBI, Addis Ababa University, Khartoum University, and the Institute of Environmental Studies IVM of the Free University of Amsterdam.

### Research Outputs

#### Numbers 2006 2007

| Research Outputs     | 2006       | 2007       |
|----------------------|------------|------------|
| Journal articles     | 89         | 102        |
| Books                | 7          | 5          |
| Chapters in books    | 26         | 18         |
| Paper in proceedings | 70         | 102        |
| PhD thesis           | 11         | 5          |
| Other publications   | 9          | 4          |
| <b>Total</b>         | <b>212</b> | <b>236</b> |



## CORE ACTIVITIES | CAPACITY BUILDING

The total project turnover in 2007 was € 7.8 million. Capacity Building (36%) and Research projects (34%) make up the majority. Research projects continued to increase in terms of the overall economic turnover from 30% in 2006 to 36% in 2007. The complete overview of projects in which UNESCO-IHE was involved in 2006 is presented in Annex 4.

An important capacity building project for the water and wastewater sector in Iran was initiated in 2007, consisting of three inter-related components: training courses, study tours and workshops, and aims to train 2,100 Iranian professionals on water and wastewater engineering and water service management. It will run until the third quarter of 2009 and UNESCO-IHE will mainly be involved in development of the courses, the training-of-trainers and project coordination.

An examples of another acquisition in 2007 was a tailor-made course on water quality monitoring to train 26 senior officers of the Nigerian Federal Ministry of Water Resources to support their 'Water Quality Laboratories and Monitoring Network' project, financed by African Development Bank. In 2007 UNESCO-IHE also obtained funding from the Partners for Water programme to analyse the capacity needs and to draft a capacity development plan for the Indonesian Ministry of Public Works to facilitate the ongoing decentralisation process and implement the water sector reform in Indonesia.

In 2007 the EC-funded project SWITCH progressed well; Learning Alliances were set up in all 12 study cities, while demonstration projects were initiated in Tel Aviv, Lodz and Zaragoza, with planning well underway in other cities. Several scientific workshops were held between project partners and

stakeholders. The 5-year project on integrated urban water management has a € 24 million budget to build capacity of local governments through the learning alliance approach in various locations in the world. A learning alliance brings together stakeholders to find effective local solutions, by conducting action research and bringing positive results quickly into widespread use. In total 32 partners are involved in the research and demonstration activities.

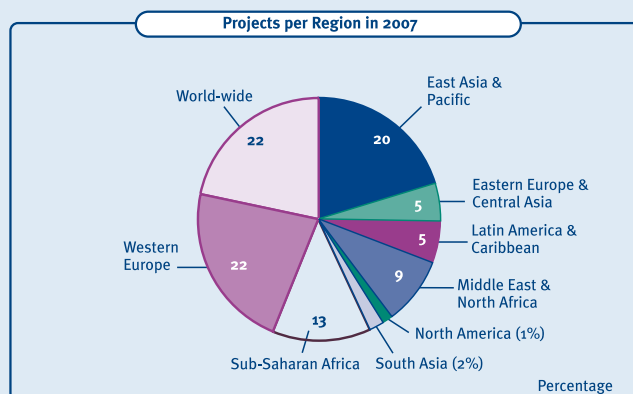
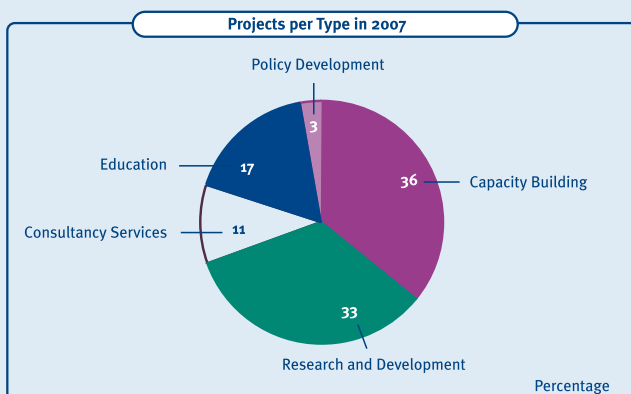
Together with UNEP-GPA, UNESCO-IHE is involved in the Improving Municipal Wastewater Management in Coastal Cities in ACP Countries project, funded by the World Bank. The project aims to improve skills, knowledge and attitudes needed in project identification, planning and financing at the municipal level in water, sanitation and wastewater management and in total about 50 short courses will be given in the ACP Countries in the Western Indian Ocean (East Africa), West Africa, South Pacific and the wider Caribbean. The first short course was offered in 2007 in Suriname.

As founding member UNESCO-IHE is still actively involved in WaterNet, a regional network of 56 partners in Southern Africa, building and strengthening capacity for integrated management of water resources through education, research, and training. WaterNet delivers more than 40 MSc graduates annually. Funding for the WaterNet activities comes from DGIS, Sida and the European Commission.

Within the second phase of the Nile Basin Capacity Building Network project a national node was launched in Congo. The partners offer training opportunities and share knowledge within the network through collaborative platforms. Professionals of the

network are involved in integrated applied research within six thematic research clusters: river structures, river morphology, flood management, GIS and modelling, hydropower and environmental aspects.

The Dutch capacity building programme for the Institutional Strengthening of Post-Secondary Education and Training Capacities (NPT) remained an important funding source of UNESCO-IHE's capacity building activities. The ongoing projects financed by NPT in Ghana, Rwanda and Indonesia made good progress in 2007. In Ghana, 22 new participants started their MSc studies in the newly established Water Resources Engineering and Management (WREM) and Water Supply and Environmental Sanitation (WSES) programmes, while another 22 completed their taught part of the programme and are conducting their MSc research; in addition, the first tailor made short course in Waste Water Management was organised and the first online programme in Water Transport and Distribution was launched in 2007. In Rwanda, 20 participants are well on track with their MSc research and are expected to graduate in March 2008. Moreover, several inter-disciplinary research projects were initiated in which the National University of Rwanda collaborates with national and regional partners. In Indonesia the cooperation between ten partner universities was further strengthened; an on-line collaborative platform was established to facilitate knowledge exchange. Training needs were articulated by stakeholders in the Indonesian water sector and a capacity building needs assessment was carried out. Two short courses were delivered and the first training-of-trainers for staff members of the universities was offered.



Working in partnership has characterised the work of UNESCO-IHE in recent years. In March 2006, the institute presented a comprehensive partnership model as its operational philosophy to the UNESCO Member States in Paris. The developments culminated in the second half of 2007 with the formulation of the business plan and programme for the UNESCO-IHE Global Partnership for Water Education and Research signifying a further step towards the transformation of UNESCO-IHE into a partnership institute, which will drive the 2008 development agenda for the institute. The concept entails the further internationalisation of education, establishing transfer of academic credit systems, facilitate participant mobility and academic staff exchange, collaborative research and enhancing the relevance of research and education by systematically incorporating local knowledge and experience.

These concepts are based on the experience built up through the UNESCO-IHE Partnership for Water Education and Research (PoWER), established in 2002. PoWER is a coalition of 18 universities and research institutes from 15 countries. The Asian Institute of Technology joined the partnership in 2007. Also in 2007, PoWER continued the joint development of online courses, which are delivered in distance learning format, but are also part of the regular master programmes, tailor-made courses and workshops. Currently there are 11 online courses (Annex 2), while 5 new courses are currently being developed in Biological Wastewater Treatment, Water and Climate, Groundwater Pollution, Solid Waste Management and Water Quality Assessment. The online format was instrumental in an innovative refresher course, bringing alumni from the Nile and the Yangtze River together.

Also under the aegis of PoWER is the joint Master Programme in Hydroinformatics with Hohai University and the Nanjing Hydraulic Research Institute, which entered its third academic year and has been extended to specialisations in Coastal Engineering and Hydrology in addition to Hydroinformatics. A similar joint programme is being developed with ITAIPU bi-national Corporation (Brasil, Paraguay). At the end of 2007, consultations started with the Asian Institute of Technology to establish a joint master programme in Urban Water Engineering and Management. Finally, four master thesis participants

participated in the first PoWER participant exchange program.

The Training of Trainers Workshop on Innovation in Education at UNESCO-IHE was attended by almost 30 staff from the different member institutes. The workshop paid specific attention to pedagogical methodologies related to e-learning and to problem based learning. It was concluded with a two day workshop on research skills.

PoWER's research agenda is gaining momentum. Under the specific partnership programme, it concluded five collaborative research projects, which will be published in early 2008. Two master theses from Makerere University were concluded in the context of the ongoing PhD research 'Information systems and tools development for water quality management in the Nile River basin'. Four new collaborative research projects were started up: 'development of an urban wastewater system data network', 'the impact of climate change on livelihoods of marginalised communities', 'early flood warning systems in ungauged basins', and 'assessment of constructed wetlands for wastewater treatment and reuse'. In addition the partners collaborate in a great number of research projects outside the programme proper, as described elsewhere in this report.

UNESCO-IHE continued to assist WaterNet (Southern Africa), NBCBN-RE (Nile Basin) and CK-Net (Indonesia) -all regional



Memorandum of understanding with the Asian Development Bank & the Singapore Public Utilities Board

networks - in developing education, training and research capacities. WaterNet, the IWRM capacity building network in Southern Africa, was established as a trust in 2007. This enables donors to enter into direct agreements with the network without UNESCO-IHE's intercession. In the Asia Pacific region, a new initiative was launched to set-up the Asia Pacific Water Forum network of knowledge hubs. At the initiative of the Asian Development Bank and the Singapore Public Utilities Board, UNESCO-IHE was asked to facilitate the process of designing and establishing the network.

In 2007, two important new water institutions were established in the Netherlands: TTIW/Wetsus for water technology and Deltares for delta technology. UNESCO-IHE had several meetings with these parties and is in the process of identifying fields of cooperation. As part of UNESCO-IHE's global partnership initiative, the Institute launched a joint MSc specialisation in 'Land and Water Development' with Sri Wijaya University in Indonesia.

Ties with UNESCO were further strengthened through – among others – the cooperation in the EC/FP6 project SWITCH, the development of a strategy for an efficient partnership among the various actors engaged in freshwater issues in UNESCO, and contributions to the 3rd World Water Development Report.

## BILATERAL PARTNERSHIPS

UNESCO-IHE has bilateral partnership agreements with more than 30 public and private organisations in support of shared interests in education, research and capacity building. The following agreements were signed in 2007:

Ministry of Water Resources of Nepal, Department of Irrigation (DOI)  
Signed: June 2007

*Goals:* Capacity Building of the Department of Irrigation through staff development at MSc-level and by carrying-out research that contributes to the improvement of water management and flood protection in Nepal.

University of South Florida, Dr. Kiran C. Patel Center for Global Solutions  
Signed: June 2007

*Goals:* Cooperation in activities of an academic and cultural nature by stimulating the exchange of staff and participants. This includes field visits of MSc participants of UNESCO-IHE to Florida, guest lecturing, joint research projects and the development of joint education programmes.

Asian Institute of Technology (AIT)  
Signed: June 2007

*Goals:* Development of joint educational programmes, including short and tailor-made courses, establishment of a credit transfer system for MSc specialisations, and facilitation of the exchange of MSc participants. The cooperation also aims at co-supervision of PhD research and the implementation of joint capacity building projects in support of sector organizations. A specific objective is for AIT to become full member of UNESCO-IHE's Global Partnership for Water Education and Research.

Asian Development Bank (ADB) & Singapore Public Utilities Board (Singapore-PUB)  
Signed: June 2007

*Goals:* Provide support in establishing the Asia-Pacific Water Forum (APWF) network of knowledge hubs, review of water sector capacity development experience in the Asia and Pacific region, and develop water knowledge products leading to APWF publications on priority rural, urban and basin water topics.

National Water and Sewerage Corporation (NWSC), Uganda  
Signed: June 2007

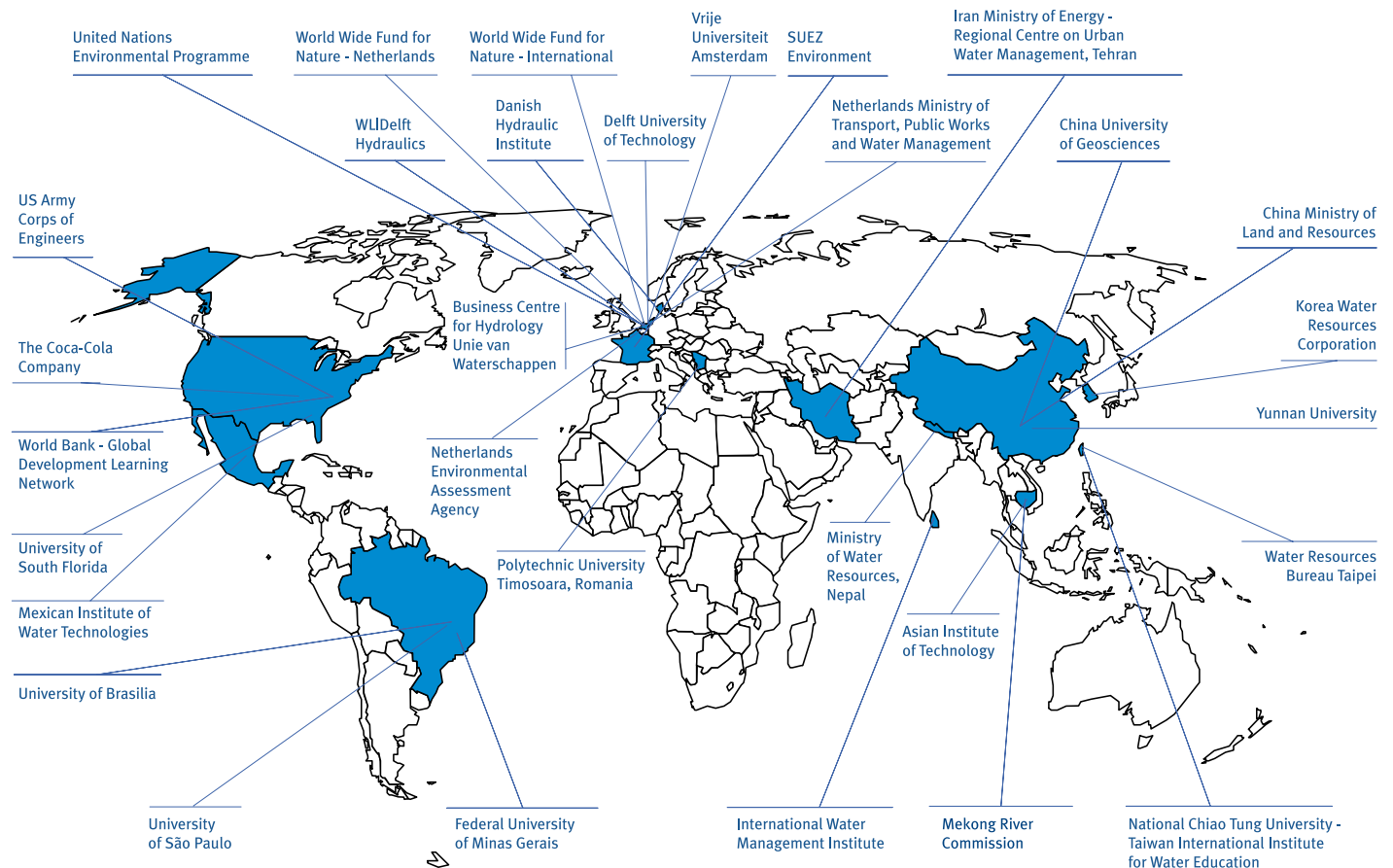
*Goals:* Joint implementation of capacity building activities on the Sub-Saharan continent and development of strategies for education and training of utilities in this region. Parties will explore possibilities to mobilize UNESCO-IHE alumni and NWSC staff as change agents in sector reform programs.

Politechnica University Timisoara (UPT), Romania  
Signed: September 2007

*Goals:* Identify opportunities for UPT participants to participate in UNESCO-IHE MSc and PhD programmes, conduct short courses and develop ideas for joint capacity development activities in Romania and the Eastern Europe region.

Instituto Mexicano de Tecnología del Agua (IMTA)  
Signed: December 2007

*Goals:* Identify opportunities for IMTA participants to participate in UNESCO-IHE MSc and PhD programmes, conduct short courses and develop ideas for joint capacity development activities in Mexico and the Central America region.









## THEMATIC DEVELOPMENTS



The theme of water security at UNESCO-IHE involves protection against water related hazards, sustainable development of water resources and safeguarding of (access to) water functions and services.



In 2007, water management and water engineering at UNESCO-IHE were primarily concerned with human interventions in water systems, aimed at enhancing the beneficial and sustainable use of water for various purposes, as well as the study of both surface water and groundwater in terms of quality and quantity. Main systems studied were water supply, irrigation and drainage, navigation, hydropower, environmental control and the protection against water infrastructure-related shortcomings and disasters. An important new area at the Institute was National Plans for Water Security.

The Master Programme in Water Science and Engineering offered five specialisations: Hydrology and Water Resources, Hydraulic Engineering and River Basin Development, Hydraulic Engineering – Coastal Engineering and Port Development, Hydraulic Engineering – Land and Water Development, and Hydroinformatics. In 2007, 82 participants started their MSc research, and 54 new participants were registered for the academic year 2007-2009.

'Water and Climate' has gained prominence as a priority issue in the sector; climate change and climate variability are key factors for identification of the design parameters that define the location, dimensions and operation of hydraulic infrastructure as well as the vulnerability of infrastructure to risk of inundation. 'Floods and Droughts' related subjects – vulnerability assessment and risk management, storm surge modelling and coastline stability – continued to be prominent on the Institute's research agenda. Integrated modelling work and development of decision support systems for transboundary water management issues, especially in areas of potential conflict such as the Middle East, Nile Basin and Central Asia, were an important part of the research and advisory services practice of UNESCO-IHE in 2007.

In Jordan, Israel, West Bank and Gaza, the Institute is involved in two major EXACT projects related to water scarcity and water re-use. One project focuses on groundwater recharge and waste water treatment. Another project involves modelling and decision support for water allocation and treated waste water reuse, and developed small unit waste water treatment technologies, infiltration reservoirs, water allocation models and a common decision support system for water allocation in the region.

In cooperation with partners from the USA, the Institute has undertaken research that models the effects of natural disasters on the stability of coastlines and coastal zones. Target regions include among others the Gulf of Mexico, Southern China and the Bay of Bengal – densely populated coastal areas, often vulnerable to hurricanes and tsunamis.

Over the past years UNESCO-IHE has rapidly increased its knowledge and capacity for education and research on water and climate topics. Both within the Netherlands as well as overseas projects were implemented in flood resilience with the municipality of Dordrecht, the Delft Cluster roads and floods project, and other projects related to dike stability failure mechanisms. Together with the Japanese ICHARM institute, a specialised short course on the topic was developed and was conducted for the second time in 2007.

Important progress was made with research and the application of technologies related to groundwater quality. Work on treating arsenic contaminated groundwater was continued, including testing and improving filter systems that can be used in rural conditions and in the urban environment. Work on groundwater pollution and groundwater infiltration with treated waste water, based on PhD research, was continued.

Throughout the world, it is recognised that essential life-support ecosystems need to be conserved for mankind's well-being and survival, and to maintain an adequate resource base for coming generations. At the same time ecosystems are used for many different purposes and hence should be exploited wisely. This apparent conflict lies at the basis of Environmental Integrity as a concept on how to balance human development and environmental quality. During the International Symposium 'Water for a Changing World: Enhancing Local Knowledge and Capacity' held in 2007, the Environmental Integrity of a water resource was defined as 'the ability of that resource to support the components and services that are determined to be desirable by a comprehensive stakeholder process.'



In its programmes, the Institute therefore aims at integrating natural and socio-economic sciences to address societal needs while at the same time preserving ecosystem functions. Efficient, equitable and sustainable allocation and use of natural resources, pollution prevention and control and wise use of aquatic ecosystems are recurrent focal themes. This is reflected in cross-cutting activities such as adaptation to climate change, environmental water allocation and integrated and sustainable urban water management in the 'city of the future' (SWITCH project).

The Master Programme in Environmental Science offers four specialisations: Environmental Science and Technology, Environmental Planning and Management, Water Quality Management and Limnology and Wetland Ecosystems (implemented jointly with the Institute for Limnology, Austrian Academy of Sciences, Mondsee, Austria). In 2007, 44 participants defended their MSc thesis successfully, 49 started their MSc research project and 38 were registered for the academic year 2007-2009. Almost 60 external participants followed one of the regular modules in the ES programme. The new summer course 'Environmental Water Allocations' was offered in 2007 and a start was made with the development of two new online courses for delivery in 2008: 'Water quality assessment' and 'Climate change in integrated water management'.

Major research projects within this theme focused on integrated urban water management (SWITCH), developing design criteria for road construction in floodplains (Roads and Floods in the Mekong), green design and pollution prevention (Human Resources Development for the improvement and protection of environment in Asia), improving enforcement in transboundary management, and functioning of river basin organisations. In addition, 12 PhD projects were running and two of these were submitted for defence in early 2008.

The NPT capacity building project 'Establishment of an MSc Programme in Water Resources and Environmental Management at the National University of Rwanda' delivered its first batch of MSc graduates: 12 participants defended their thesis successfully in 2007, while eight were in the final stage. A research agenda was developed during a participatory process with a large number of stakeholders and researchers. This agenda will be used as a basis for developing research activities in Rwanda, including MSc and PhD projects.

In 2007, two capacity building projects were initiated in Indonesia: one on water quality management in Manado with CN-UNSRAT and the Drinking Water Company Drenthe and another on solid waste management in Malang. Other project activities mainly included short training courses on river basin management, wetland management and environmental water allocations. A number of these courses were jointly organised under the MoU's with UNEP/GPA and WWF. An interesting development was the combined online course on wetland management with a face-to-face workshop in Indonesia. This proved to be an efficient model for more online deliveries of tailor-made courses.

The rapid pace of urbanisation exerts enormous pressure on the local environment and on available resources and generates a high demand on infrastructure services such as water supply and sanitation. Both technological and integrated approaches to human settlements infrastructure services provision and management are important aspects of urbanisation. Under this theme the Institute deals with analysis and design of urban infrastructural systems, related to drinking water treatment and distribution and sanitation (sewerage, waste water treatment, drainage and urban flooding) at scales ranging from large communities to cities, including peri-urban areas and slums.



In 2007, 29 participants of the Masters Programme in Municipal Water and Infrastructure received their MSc diploma, 42 participants started their MSc research, and 33 participants were admitted to the 2007-2009 programme. A major effort was the development of a new group work, derived from a real case study of St. Maarten, and a review of modules on asset management, sewerage, and drainage. Preliminary studies were carried out in partnership with partner universities in the implementation of this MSc programme.

A new research project - the assessment of arsenic removal technologies - was initiated in 2007. Four new PhD research studies were initiated dealing with urban water and sanitation and sustainable urban infrastructure systems. Continuing research activities include arsenic removal, membrane technologies and waste water treatment. New developments include a risk analysis of water networks, urban flood resilience, and sustainable sanitation.

Short courses and refresher seminars were organised, including membrane technology (in Delft), drinking water treatment (Middle East), advanced treatment processes (in Taiwan of China), waste water treatment design and water transport and distribution (both in Korea), sanitation (in Ghana), water quality control in water supply and flood resilience (both in Delft). The online courses in ecological sanitation and the water transport and distribution were also delivered. Three new modules were developed: solid waste management, groundwater pollution, and biological waste water treatment, which will start in 2008.

A seminar on urban waste water management was organised in Costa Rica, and a design workshop related to flood resilient planning and design workshop took place in Delft. A workshop on integrated urban water management in Paris was co-organised with UNESCO-IHP.

The Water Management and Governance theme specialises in the broad field of integrated water resources management (IWRM) as well as water services management. The specific aims are to build capacity for sustainable management and wise use of water and environmental resources, and to contribute to the delivery of water and sanitation services, and hence to the creation of access to safe and affordable water. The theme covers the linkages between the biophysical dimension of the water resource and the social-institutional dimension. A further emphasis is on the analysis and implementation of policies and strategies aimed at the delivery of water and sanitation services. Different institutional levels are addressed ranging from local (urban and rural) users up to the level of international river basins.



The following sub-themes were addressed in research and educational activities:

- The global imperative of good governance, since it is realised that water crises are often crises of governance;
- The involvement of the private sector, and private capital, in water services provision. Given the inherent management issues of such services, this requires innovative institutional and regulatory arrangements;
- The increasing scarcity of water resources and the need for increased allocation efficiency and demand management;
- The impact of climate change on water users and consumptive activities;
- Conflict prevention, mediation and resolution.

In 2007, two PhD fellows graduated, with theses entitled 'Modelling of membrane bioreactor systems' and 'Drinking Water Sector in Ghana, Drivers for performance'. Seven new PhD fellows started their research projects. For more information on PhD research, see Annex 3.

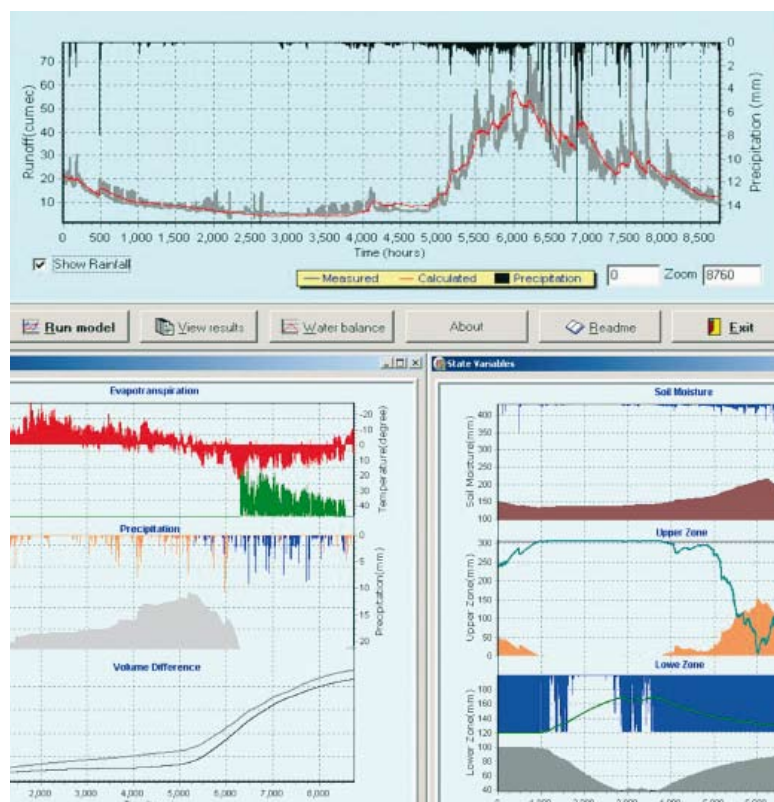
The Masters Programme in Water Management offered three specialisations: Water Resources Management, Water Services Management and Water Quality Management. In 2007, 28 MSc participants graduated, 28 participants started their MSc research, and 26 new participants were admitted to the programme. Three modules of the Masters programme were also offered as an online course and seven modules were offered as short courses.

During the year much time was dedicated to developing a fourth specialisation in Water Conflict Management. This specialisation will deal with the management of water resources conflicts, focusing on negotiation, mediation and decision-making processes. This specialisation will be offered for the first time in 2008, in collaboration with the University of Dundee in the UK and the UNESCO programme Potential Conflict to Cooperation Potential (PCCP).

Through an IBRD loan to the National Water and Waste Water Company of Iran, the Institute was awarded a contract to conduct 59 short courses and three seminars inside and outside Iran, and to develop curriculum and be involved in organising 20 study tours in Europe, in conjunction with the Power and Technology University of Teheran. These courses will be offered starting in 2008.

In 2007 under the Water Management and Governance theme, there was continued involvement in the many projects, including WaterNet, WaterMill, Rwanda Capacity Building, Water for African Cities, Small-holder System Innovations in Integrated Watershed Management, and Integrated Water Resource Management for Improved Rural Livelihoods in the Limpopo. A new integrated research project on the Blue Nile was awarded by NWO/WOTRO, and will start in 2008. There was extensive participation in the EU Water Initiative in the components of water supply, IWRM, and water facility.

The educational and research activities in the thematic area of Information and Communication Systems promote effective use of ICT in various aspects of water management such as data monitoring and acquisition, computer-based modelling, and knowledge-based systems for integrated water resources management.



In 2007, the Hydroinformatics specialisation was offered as a part of the Master Programme in Water Science and Engineering. 21 participants received their MSc diploma, 19 participants started with their MSc research, and 15 participants were admitted to the specialisation. Eight water professionals from Nile Basin countries – funded by the Nile Basin Initiative – started their research work on developing models as components of a decision support system for Water Resources Planning and Management.

In 2007 UNESCO-IHE continued with the joint Master Programme in Hydroinformatics offered in partnership with Hohai University in China. Five participants from the first batch of this programme obtained their MSc degrees in 2007. In October 2007, three participants from the second batch started their MSc research, and six participants from the third batch started their first semester at Hohai University in Nanjing.

In July 2007, UNESCO-IHE hosted the 4th International SWAT conference and workshops. The Soil and Water Assessment Tool (SWAT) is an open source software tool for river basin management. Participants of the conference included SWAT initiators and developers and around 140 users from over 40 countries.

In the framework of the Delft Cluster Research Programme the Institute was involved in the 'Integrated urban water management' and 'Morphodynamics of North Sea and Coast and Coastal defences' projects. Also in the Delft Cluster Research Programme, the 'Safety against Flooding' project developed a number of computational intelligence techniques complementing and replacing existing hydrological models, and the 'Management of hydrological extremes' project developed a water level forecasting system that uses ensemble precipitation forecasts.

In the EC FLOODsite project the focus was on developing new uncertainty analysis frameworks to be used in flood risk management, and optimising the structural and hydraulic performance of drainage networks using novel analysis techniques. An Internet-based platform was developed for dissemination of FLOODsite research to be used later for e-Learning courses.

In the EU TenCompetence project, the online courses Flood Modelling for Management and Decision Support System were used to validate the learning management infrastructure and the pedagogical models being developed in the project.

In collaboration with HydroLogic BV a feasibility study was done for the development of a Demonstrator Decision Support System for Flood forecasting. This resulted in the development of this system for for the Timis-Bega basin.

In 2007, UNESCO-IHE initiated collaboration with the Centro Internacional de Hidroinformatica (CIH). This centre is supported by ITAIPU Binacional, the organisation responsible for power production, dam operation and catchment management of one of the largest dams in the world. A two and a half week course 'Hydroinformatics for practitioners: introduction to theory and applications' was delivered for 33 water professionals from Brazil, Paraguay, Chile, Ecuador and Mexico.

In June 2007 UNESCO-IHE signed a LOI with the Asia Development Bank and PUB Singapore. One of the main activities was the development and establishment of an Asia-Pacific Water Forum Network of Regional Water Knowledge Hubs. Twelve water related centers of excellence in the region expressed their intention to cooperate and to offer their services to clients and partners in the region.







**ORGANISATIONAL DEVELOPMENTS  
FINANCIAL REPORT  
FELLOWSHIP TRUST FUND**

# ORGANISATIONAL DEVELOPMENTS

## PERSONNEL AND ORGANISATION

On 31 December 2007, staff equalling 151 fulltime-equivalent (fte) were employed by UNESCO-IHE, of whom 53% academic and 47% supporting staff.

The 'life-span regulation' policy was developed. A draft for the 'regulation of office devices for employees' was written. The recruitment process was analysed and a uniform hiring policy was established for academic and supporting staff.

A discussion on the appointment procedures for Associate Professors and the Institute's standards for this position was started. This will be further developed in 2008. Other policies under construction are a Trainee policy and an International Relocation & Introduction policy. The implementation of the new CAO which took effect retro-actively per September 2007 was started, and will be continued in 2008.

The risk analysis and implementation of recommendations for the Laboratory were finished. Sickness levels at the Institute were below the national average in most departments.

With an increase of international influx of staff members from outside the Netherlands, immigration has become a major part of P&O's portfolio. In 2007 much time was invested in a further streamlining of knowledge on this subject and relations with responsible agencies in the Netherlands.

## COMMUNICATION AND MARKETING

The 50th anniversary of UNESCO-IHE presented an excellent opportunity for communication and marketing of the Institute both in and outside the Netherlands. The main event was the international symposium in June 2007 entitled 'Water for a Changing World – Enhancing Local Knowledge and Capacity'. The event attracted some 250 participants to the Institute, including politicians and representatives from knowledge centres, sector organisations, donors and alumni. Guest of Honour and member of the closing panel was Crown Prince Willem Alexander of the Netherlands. The symposium identified priorities that need to be addressed to enhance knowledge and capacity for sustainable water management, and articulated a set of recommendations which were made available through the website and in print.

In the framework of its 50th anniversary, the institute also invited alumni to share their professional experiences after having completed a study at UNESCO-IHE. The best stories were published in the book 'Messages from Alumni in the Field'.

The general public in Delft was targeted through the organization of an open day, with demonstrations in the lab and in the video-conference facility, and by a water exhibition in the Delft Technological Meeting Point (TOP) centre. The participation of UNESCO-IHE in the RopaRun, a relay from Paris to Rotterdam - extended for the special occasion to link UNESCO's headquarters in Paris to UNESCO-IHE in Delft - also gave wide exposure.

Marketing efforts continued to focus primarily on the Masters' Programmes and Online Courses. New materials developed in 2007 included an Education and Training Guide and a Research Brochure. In July 2007, the new UNESCO-IHE website was launched. The site has user-friendly interfaces both for visitors and editors, and its structure reflects the products and services the Institute has on offer. Initial web-statistics are promising and show a growing number of visitors.

UNESCO-IHE's appearances in the media increased, be it in scientific journals, newspapers, magazines or on TV and radio. The cooperation with UNESCO's Bureau of Public Information (BPI) resulted in a regular exchange of articles and publications in the Science Sector magazine and on the UNESCO Water Portal.

Large external events in which UNESCO-IHE participated in 2007 included the Stockholm Water Week, the Singapore Water Week, the Commission for Sustainable Development session and the Asia-Pacific Water Summit in Japan.



Sporty staff members during the annual 'day out'

## ICT

UNESCO-IHE purchased a new back-up system. The installation will be completed in the 1st quarter of 2008.

A wireless network was installed in the common areas of UNESCO-IHE's main building. This network gives access to internet and is used by guests, staff and participants with laptops. It will be extended throughout the rest of the building in 2008.

EZ Publish, a new Content Management System, was implemented. This system was used to create the new UNESCO-IHE website, which came online in the middle of 2007.

The UNESCO-IHE Multimedia Centre (MC) was upgraded with new laptops, a faster wireless network and new mobile cameras. An Interactive Electronic Whiteboard was mounted in one of the lecture rooms. Lecturers are encouraged to make use of these innovative educational tools and methods.

The new IBM software supplier Promax took over the maintenance of the UNESCO IHE's participant administration system Salsa.

## STUDENT AND EDUCATIONAL AFFAIRS

In October 2007 the third batch of participants in the 18-month only Master of Science programme started their studies. Due to a lower number of incoming participants as well as better planning, no additional accommodation was needed.

During UNESCO-IHE's 50th anniversary year several activities for alumni were organised such as a photo competition, a refresher seminar and platform, an active update of data and login information, a videoconference on Climate Change and several refresher seminars.

In 2007, the library's main goal was to improve the quality of the collection and the expansion of access to on-line journals. Through the United Nations Electronic Information Acquisitions Consortium (UNEIAC) many electronic resources were acquired. UNESCO-IHE participants and staff can now make use of the online resources of World Bank Publications, the Journal of Development and Change, Science Direct, Human Organization, JSTOR, Science Magazine, Scientific Commons, Society and Natural Resources, The European Journal of Development Research, Ingenta Connect, and the World Bank E-Library.

Throughout the year, social evenings with international themes were organised. Participants introduced their culture to fellow participants, staff and friends, through performance and food festivals. Social excursions included trips to the Netherlands, Belgium and France.

In 2007 an International Sports Day for more than 500 participants was organised. UNESCO-IHE successfully competed and regained the Challenge Cup.

## FACILITY MANAGEMENT

During 2007, Fokkema Architects developed a plan for the office upgrade of the Oude Delft Offices. The Westvest 3-5 building was sold to a project development company. The MAI department moved to the Oude Delft 58 on an interim basis until the renovations to the main building are completed.

The Burglar Alarm and Fire Alarm installations were replaced. All copying machines and locks accessing to outside the building were replaced.

In 2007, initial plans were developed for the solution of constraints in office space, to take place when several in-house partners will leave the Institute's premises by the end of 2008.



UNESCO-IHE operations in 2007 showed an increase in both income and expenditures compared to 2006. The total turnover was just under €25 million. The overall result presented a deficit of €52,000 versus a €68,000 deficit in 2006. In relation to the turnover, the overall result did not change.

## INCOME

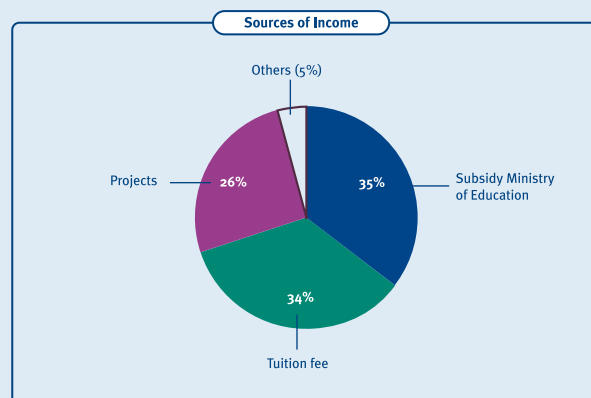
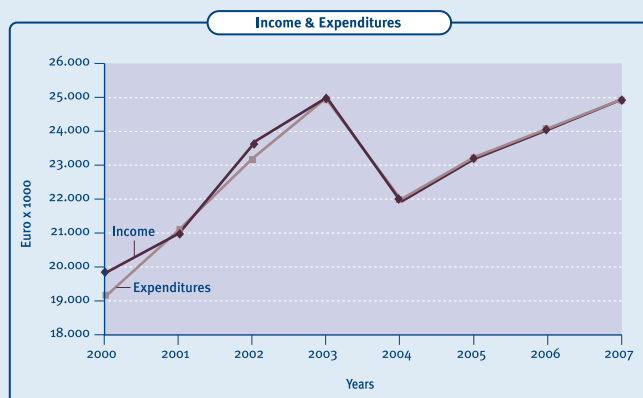
The income of the Institute derives from three major sources: the subsidy of the Ministry of Education, 'tuition fee' and 'projects'. The subsidy from the Ministry of Education was increased at a rate below inflation, as the Dutch government applied an 'efficiency factor' to all higher education institutes. The tuition fee income increased marginally (<1%), as a result of no significant change in the number of student-years. The project income in 2007 was marginally higher than in 2006 (<1%). Because the direct project costs were about 8% higher than in 2006, the project fee income decreased by 13%. The top 10 projects SWITCH (EC), Delft Cluster #17 (BSIK), PoWER (DGIS), NPT-WRESP Ghana (NUFFIC), EC Novel Biological Engine (detachment WUR), EXACT (DGIS), Waternet (DGIS/SIDA), 17 On-line courses (Third parties), Yellow River SMFF (ORET-DGIS) and KNNB-NBCBN Nile Basin-RE (DGIS) accounted for 49% of this fee income. Other income almost doubled compared with 2006. Next to the regular income for rental of office space and student housing to third parties, it included donations to the Fellowship Trust Fund of €52.591, by Coca Cola (€46.700), FHI/Het instrument (€1.113), Oibina (€1.090), and €3.688 from individual donations mainly during the Institute's 50th Anniversary celebrations. The sharp increase in other income is due to three events: the sale of the Westvest 3-5 building, the closure of the 2003 NFP accounts, and the reimbursement of paid VAT over 2003.

## EXPENDITURES

A distinction is made between programme and non-programme expenditures. Programme expenditures directly relate to outputs of the Institute, while non-programme expenditures concern indirect or overhead costs. Programme expenditures are fully linked to the items mentioned in the income section. There was a modest increase in the non-programme expenditures as a consequence of the costs for the Institute's 50th Anniversary celebrations, rental of furniture, moving out of the Westvest 3-5 building, start of on-line library subscriptions, and the organisation of the international (IO) Sports day.

The staff and management costs were influenced by the regular salary increase in line with the general trend at Dutch universities, an increase in social security costs, an increase of 1.9% in the end-of-year bonus, an increase of the average number of staff from 145 fte in 2006 to 145.6 in 2007, and an increase in seconded staff. In the building costs, the move of the MAI department to another building, and the rental of furniture explain the marked increase. The facilities costs increased mainly in depreciation costs due to the investment of a new ICT back-up system, and the costs for expanding the access to on-line journals through the library. The education related costs decreased due to less unoccupied student housing and no unexpected fellowship costs. The acquisition and marketing costs were sharply more than 2006 due to the

Institute's 50th Anniversary celebrations, including the costs for the international symposium 'Water for a Changing World – Enhancing Local Knowledge and Capacity.' The general costs increased sharply because of a large amount of long outstanding payments due, leading to an increase of the reservation of uncollectible debts, and an increase in hiring external services such as consultancy, lawyers and accountants.



## BALANCE SHEET

The balance sheet shows a ratio of 12/88 between equity and borrowed capital (solvency 12%). This is a marginal increase compared with 2006 (11%) but still far from the aim of 20%. The borrowed capital includes provisions and current liabilities. In the current liabilities reservations were made for leave hours, holiday bonuses and the costs of one term of leasing the building. The provisions are for building maintenance and refurbishing. The current ratio is 1.14 (2006: 1.09), which means that on the short term the Institute is creditworthy. For the long term sustainability of the Institute the policy will be to increase the financial reserves.

## STATEMENT OF INCOME AND EXPENDITURES (amounts in €000s)

|   | 2007          | 2006          |
|---|---------------|---------------|
| <b>Income</b>                               |               |               |
| Subsidy Ministry of Education               | 8,826         | 8,671         |
| Tuition Fee                                 | 7,016         | 6,969         |
| Projects                                    | 7,867         | 7,820         |
| Others                                      | 1,186         | 617           |
| <b>Total income</b>                         | <b>24,895</b> | <b>24,077</b> |
| <b>Programme expenditures</b>               |               |               |
| Tuition Fee (stipends, guest lecture, etc.) | 4,675         | 4,973         |
| Projects                                    | 5,334         | 4,920         |
| <b>Total programme expenditures</b>         | <b>10,009</b> | <b>9,893</b>  |
| <b>Non-programme expenditures</b>           |               |               |
| Staff and Management                        | 9,646         | 9,567         |
| Buildings                                   | 2,349         | 2,192         |
| Facilities                                  | 1,049         | 956           |
| Education related costs                     | 1,086         | 1,310         |
| Acquisition and Marketing                   | 446           | 207           |
| General Costs                               | 474           | 258           |
| Interest                                    | -164          | -176          |
| <b>Total non-programme expenditures</b>     | <b>14,886</b> | <b>14,314</b> |
| <b>Overall result</b>                       | <b>0</b>      | <b>-130</b>   |
| Appropriations Fellowship Trust Fund        | -52           | 62            |
| <b>Operating result</b>                     | <b>-52</b>    | <b>-68</b>    |

## BALANCE SHEET (amounts in €000s)

|                               | 31 DECEMBER 2007 | 31 DECEMBER 2006 |
|-------------------------------|------------------|------------------|
| <b>Assets</b>                 |                  |                  |
| Fixed assets                  | 1,837            | 2,143            |
| Accounts receivable           | 6,674            | 5,917            |
| Cash and banks                | 7,017            | 9,430            |
| <b>Total</b>                  | <b>15,528</b>    | <b>17,490</b>    |
| <b>Equity and liabilities</b> |                  |                  |
| Equity                        | 1,393            | 1,445            |
| Fellowship Trust Fund         | 445              | 392              |
| Provision                     | 1,630            | 1,531            |
| Current liabilities           | 12,060           | 14,122           |
| <b>Total</b>                  | <b>15,528</b>    | <b>17,490</b>    |

N.B. Preliminary figures

The UNESCO-IHE Fellowship Trust Fund (FTF) was created to raise funds from private and public organisations, companies, alumni and other (individual) benefactors for partial or full sponsorship of an individual's study at UNESCO-IHE. This support enables water professionals who possess the intellectual stamina and ability, but lack proper financing to receive postgraduate education at UNESCO-IHE. Every contribution is directed towards its equivalent value in terms of output.

In 2007, the FTF provided financial support to two student; the names and countries of origin of the students are listed in the Financial Statement below. Mr. Kassim started an MSc study in October 2005, and received his MSc degree in April 2007. Mr. Haque started an MSc study in October 2007, and will receive his MSc degree in April 2009.

In 2006, FHI/Het Instrument, The Coca Cola Company, and Olbina continued to donate to the FTF, while Landstra/UVW and Zeeland werkgroep became new donors. Individual donations by staff members and visitors of the Institute added up to over €3000. During the 50th Anniversary celebration the PACT Cultural Committee organised a gala performance in Theater de Veste in Delft, to put the Fellowship Trust Fund in the spotlight. The Cultural Ambassadors of UNESCO-IHE advocated the fund at different occasions. For example the Rotterdam Philharmonic Orchestra organised an advocacy event on May 18 during the performance of the young conductor Gustavo Dudamel. The Belgian group Les Ballet C de la B advocated the FTF in its production Export/Export, a piece that displays water scarcity on stage. This production went on tour in The Netherlands, Belgium, France and Germany, among other countries. A full list of UNESCO-IHE's cultural ambassadors can be found in Annex 7.

## FINANCIAL STATEMENT FELLOWSHIP TRUST FUND

(amounts in €)

**Fund on 1 January 2007** 392,751

### Donations

|  |        |
|--|--------|
| Coca Cola                              | 46,700 |
| Zeeland werkgroep                      | 37,517 |
| FHI/Het instrument                     | 1,113  |
| Olbina                                 | 1,090  |
| Landstra/UVW                           | 600    |
| Gifts during the 50 years celebrations | 3,090  |
| Interest                               | 10,971 |

**Total** 101,081

### Fellowships

|  |        |
|--|--------|
| Russel Mohammad Fazlul Haque, Bangladesh | 37,517 |
| Yakubu AL-Hassan Kassim, Ghana           | 11,214 |

**Total** 48,731

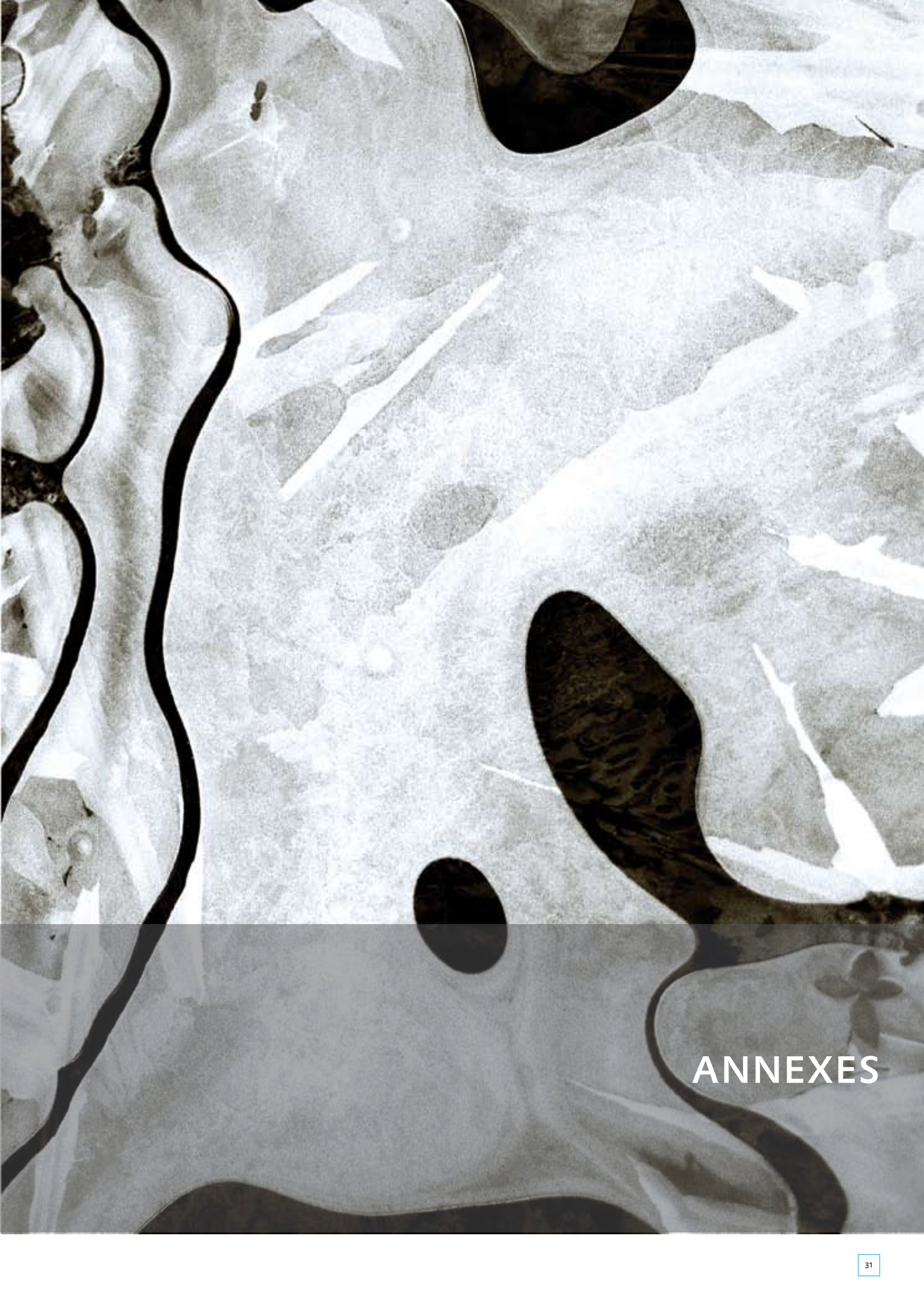
**Fund on 31 December 2007** 445,101



'Slagerij van Kampen' at the Gala Performance







# ANNEXES



| <b>REGISTERED PARTICIPANTS FOR THE ACADEMIC YEAR 2007-2009</b> |                   |                 |            |                  |            |               |             |           |            |            |            |
|--|-------------------|-----------------|------------|------------------|------------|---------------|-------------|-----------|------------|------------|------------|
|  | SOURCE OF FUNDING |                 |            | REGION OF ORIGIN |            |               |             |           | GENDER     |            | TOTAL      |
|  | Full NFP          | Co-financed NFP | Other      | Africa           | Asia       | Latin America | Middle East | Other     | Female     | Male       |            |
| <b>MSc programmes (taught part) 07/08</b>                      | <b>31</b>         | <b>54</b>       | <b>70</b>  | <b>68</b>        | <b>56</b>  | <b>14</b>     | <b>6</b>    | <b>11</b> | <b>85</b>  | <b>70</b>  | <b>155</b> |
| - Water Science and Engineering                                | 8                 | 21              | 25         | 20               | 24         | 5             | 2           | 3         | 42         | 12         | 54         |
| - Water Management   | 4                 | 8               | 14         | 7                | 11         | 4             | 0           | 4         | 13         | 13         | 26         |
| - Environmental Science  | 15                | 7               | 17         | 20               | 8          | 4             | 3           | 4         | 23         | 16         | 39         |
| - Municipal Water and Infrastructure                           | 4                 | 18              | 14         | 21               | 13         | 1             | 1           | 0         | 7          | 29         | 36         |
| <b>MSc programmes (thesis part) 06/08</b>                      | <b>40</b>         | <b>63</b>       | <b>99</b>  | <b>88</b>        | <b>67</b>  | <b>19</b>     | <b>18</b>   | <b>10</b> | <b>62</b>  | <b>140</b> | <b>202</b> |
| - Water Science and Engineering                                | 14                | 15              | 53         | 29               | 31         | 10            | 8           | 4         | 23         | 59         | 82         |
| - Water Management   | 7                 | 8               | 13         | 7                | 11         | 4             | 2           | 4         | 8          | 20         | 28         |
| - Environmental Science  | 17                | 16              | 17         | 29               | 13         | 4             | 4           | 0         | 21         | 29         | 50         |
| - Municipal Water and Infrastructure                           | 2                 | 24              | 16         | 23               | 12         | 1             | 4           | 2         | 10         | 32         | 42         |
| <b>PhD programmes</b>  | <b>12</b>         | <b>54</b>       | <b>0</b>   | <b>19</b>        | <b>22</b>  | <b>13</b>     | <b>6</b>    | <b>6</b>  | <b>21</b>  | <b>45</b>  | <b>66</b>  |
| <b>Total</b>   | <b>83</b>         | <b>171</b>      | <b>169</b> | <b>175</b>       | <b>145</b> | <b>46</b>     | <b>30</b>   | <b>27</b> | <b>168</b> | <b>255</b> | <b>423</b> |
| Percentage   | 19.6              | 40.4            | 40.0       | 41.4             | 34.3       | 10.9          | 7.1         | 6.4       | 39.7       | 60.3       |            |

| <b>REGULAR SHORT COURSES</b>                 |   |                   |
|--|---|-------------------|
| <b>THEME</b>                                 | <b>COURSE</b>   | <b>DATE</b>       |
| <b>Water Security</b>                        | Applied Groundwater Modelling   | 18/06/07-06/07/07 |
|  | Groundwater Exploration and Monitoring                                | 10/04/07-27/04/07 |
|  | Integrated Coastal Zone Management                                    | 10/04/07-20/04/07 |
|  | International Port Seminar  | 10/04/07-27/04/07 |
|  | Public Private Partnerships in the Water Sector                       | 09/07/07-27/07/07 |
| <b>Environmental Integrity</b>               | Aquatic Ecosystems: Processes and Applications                        | 18/06/07-06/07/07 |
|  | Cleaner Production and the Water Cycle                                | 01/05/07-18/05/07 |
|  | Environmental Engineering   | 05/03/07-23/03/07 |
|  | Environmental Monitoring and Modelling                                | 10/04/07-27/04/07 |
|  | Environmental Planning  | 10/04/07-27/04/07 |
|  | Environmental Policy Making   | 05/03/07-23/03/07 |
|  | Environmental System Modelling  | 01/05/07-18/05/07 |
|  | Managing Organisations and Change                                     | 18/06/07-06/07/07 |
|  | Service Oriented Management of Irrigation Systems                     | 10/04/07-27/04/07 |
|  | Water and Environmental Law and Institutions                          | 01/05/07-18/05/07 |
|  | Water Transport and Distribution I                                    | 18/06/07-06/07/07 |
|  | Water Transport and Distribution II                                   | 09/07/07-27/07/07 |
|  | Water Treatment Processes and Plants                                  | 01/05/07-18/05/07 |
| Wetlands for Water Quality                   | 05/03/07-23/03/07   |                   |
| <b>Urbanisation</b>                          | Decentralised Water Supply and Sanitation                             | 09/07/07-27/07/07 |
|  | Groundwater Resources and Treatment                                   | 05/03/07-23/03/07 |
|  | Membrane Technology in Drinking and Industrial Water Treatment        | 01/10/07-05/10/07 |
|  | Modelling of Activated Sludge Wastewater Treatment                    | 07/05/07-18/05/07 |
|  | Remediation and Handling of Contaminated Sediments                    | 10/09/07-14/09/07 |
|  | Seminar on Dredging and Reclamation                                   | 18/06/07-22/06/07 |
|  | Solid Waste Management and Engineering                                | 09/07/07-27/07/07 |
|  | Urban Water Systems Modelling   | 18/06/07-06/07/07 |
|  | Water Quality Control in Water Supply                                 | 01/10/07-12/10/07 |
| Water Resources Planning                     | 05/03/07-23/03/07   |                   |
| <b>Water Management and Governance</b>       | Financial Management of Water Organisations                           | 10/04/07-27/04/07 |
|  | Operations and Maintenance of Urban Infrastructure (Treatment plants) | 19/11/07-30/11/07 |
|  | Sustainable Wastewater Treatment and Reuse                            | 18/06/07-06/07/07 |
|  | Water Quality Assessment  | 12/02/07-02/03/07 |
| <b>Information and Communication Systems</b> | Knowledge Management for Decision Makers in the Water Sector          | 16/04/07-27/04/07 |
|  | Surface Water Treatment: Conventional and Advanced Technology         | 10/04/07-27/04/07 |
|  | Watershed and River Basin Management                                  | 09/07/07-27/07/07 |

## ONLINE COURSES

| COURSE  | DATE                                       | TOTAL PARTICIPANTS |
|---|--|--------------------|
| Wetland Management (WM)                                   | 01/04/07 – 01/10/07                        | 22                 |
| Water Transport and Distribution I (WTD I)                | 01/09/06 – 01/02/07<br>01/09/07 – 01/02/08 | 14 / 18            |
| Flood Modelling for Management (FMM)                      | 01/02/07 – 12/04/07                        | 7                  |
| Integrated Coastal Zone Management (ICZM)                 | 01/03/07 – 01/07/07                        | 18                 |
| Integrated River Basin Management (IRBM)                  | 01/03/07 – 01/07/07                        | 14                 |
| Water and Environmental Law and Policy (WELP)             | 01/03/07 – 01/07/07                        | 10                 |
| Public Private Partnerships (PPP)                         | 01/09/07 – 10/11/07                        | 12                 |
| Service Oriented Management of Irrigation Systems (SOMIS) | 01/09/07 – 01/01/08                        | 4                  |
| Ecological Sanitation (ES)                                | 01/03/07 – 01/07/07<br>01/09/07 – 01/01/08 | 25 / 24            |
| Wetlands for Water Quality (WWQ)                          | 01/03/07 – 01/07/07                        | 9                  |
| <i>Total</i>  |  | <i>177</i>         |

## REGIONAL REFRESHER SEMINARS

| COUNTRY       | COURSE   | DATE              |
|---------------|--|-------------------|
| Costa Rica    | Urban Wastewater Management in the Coastal Zones               | 04/06/07-09/06/07 |
| Zambia        | Reaching the Poor in Peri-Urban Areas                          | 25/06/07-30/06/07 |
| Egypt & China | Institutional Development and Capacity Building Needs for IRBM | 03/09/07-08/09/07 |

## TAILOR-MADE COURSES

Tailor-made courses are developed and implemented on demand. These courses serve to upgrade or refresh the knowledge and skills of experts, or to provide exposure to applications of conventional methods. All tailor made courses of 2007 are listed in Annex 4 - Projects.

## PROMOTIONS IN 2007

| NAME              | PROMOTION DATE     | COUNTRY     | PROMOTOR           | TITLE THESIS  |
|-------------------|--------------------|-------------|--------------------|---|
| Mr. M.T. Leye     | February 20, 2007  | Ethiopia    | Savenije           | <i>Conservation Tillage Systems and Water Productivity Implications for Smallholder Farmers in Semi-arid Ethiopia</i> |
| Mr. A.M. Haile    | April 27, 2007     | Eritrea     | Schultz            | <i>A Tradition in Transition: Water Management Reforms and Indigenous Spate Irrigation Systems in Eritrea</i>         |
| Mr. T. Jiang      | April 27, 2007     | China       | Amy & van Rollegem | <i>Modelling of membrane bioreactor systems</i>   |
| Mr. J.W.A. Foppen | June 8, 2007       | Netherlands | Uhlenbrook         | <i>Transport of Escherchia Coli in saturated porous media</i>   |
| Mr. K.B. Nyarko   | July 26, 2007      | Ghana       | van Dijk           | <i>Drinking Water Sector in Ghana, Drivers for performance</i>  |
| Ms. M. Zagonjulli | September 24, 2007 | Albania     | Mynett             | <i>Dam Break Modelling, Risk Assessment and Uncertainty Analysis for Flood Mitigation</i>                             |

## REGISTERED PHD FELLOWS

| NAME                  | COUNTRY      | PROMOTOR             | WORKING TITLE THESIS   |
|-----------------------|--------------|----------------------|--|
| Mrs. Abira            | Kenya        | Denny                | <i>Treatment of pulp and paper mill wastewater using a constructed wetland in the tropics</i>  |
| Mr. Alfonso Segura    | Colombia     | Price                | <i>Maximising information content from monitoring networks for optimal performance of water catchments</i>                                   |
| Mr. van Andel         | Netherlands  | Price                | <i>Anticipatory Water Management</i>   |
| Mr. Ansa              | Ghana        | Gijzen               | <i>Pathogen removal from wastewater</i>  |
| Ms. Arano             | Philippines  | vVierssen            | <i>Phylogeographic relationships as tool in managing the structurally dominant seagrass "Enhalus acoroides" in Philippine coaster waters</i> |
| Ms. Azab              | Egypt        | Price                | <i>Integration of GIS, Remote Sensing and Modeling for Water Quality Management in an Irrigated Watershed</i>                                |
| Mr. Babu              | Uganda       | Gijzen               | <i>Improving nitrogen removal in algae wastewater stabilisation ponds</i>  |
| Mr. Baghoth           | Uganda       | Amy                  | <i>Characterization of natural organic matter in water using multiple detectors</i>  |
| Ms. Balica            | Romania      | Wright               | <i>Applying the Flood Vulnerability Index as a knowledge base for flood risk assessment</i>  |
| Mr. Barretto Cordereo | Venezuela    | Price                | <i>Multi-criteria optimisation in the rehabilitation of urban drainage networks</i>  |
| Mr. Bin Abdullah      | Malaysia     | Price                | <i>Web-based spatial decision support system for integrated urban water management</i>   |
| Ms. Bremere           | Latvia       | Schippers            | <i>Saving energy and ater by maximizing the conversion of membrane filtration system</i>   |
| Mr. Buamah            | Ghana        | Schippers            | <i>Adsorptive removal of arsenic, iron and manganese from groundwater</i>  |
| Mr. Corzo Perez       | Colombia     | Price                | <i>Hybrid data driven and conceptual models in operational hydrological forecasting</i>  |
| Ms. Dai               | China        | Gijzen               | <i>Efficiency of riverbanks in removal of contaminants from rainfall runoff in cities</i>  |
| Mr. Dissanayake       | Sri Lanka    | Roelvink             | <i>The role of tidal inlets in coastal erosion</i>   |
| Ms. Essandoh          | Ghana        | Amy                  | <i>Soil aquifer treatment of wastewater: a framework for technology implementation in a developing country</i>                               |
| Mr. Galvis Castano    | Colombia     | Gijzen               | <i>Technology selection model to pollution prevention and control from domestic wastewater in small and medium towns</i>                     |
| Mrs. Guio Torres      | Colombia     | Vairavamoorthy       | <i>Sustainability for urban water systems</i>  |
| Mr. Gupta             | India        | Savenije             | <i>Decision support for conflict resolution in Indian river basins</i>   |
| Mr. Jamil             | Malaysia     | Uhlenbrook           | <i>Land use change impacts to hydrological regimes</i>   |
| Mr. Jung              | Korea        | Price                | <i>Model based decision support system for managing eutrophication in a reservoir</i>  |
| Ms. Kayoza            | Tanzania     | Akinyemi (temp.)     | <i>Integrated infrastructure for sustainable improvement of right-of-way safety in dynamic urban environments</i>                            |
| Mr. Khatri            | Nepal        | Vairavamoorthy / Amy | <i>Risk Assessment of Urban Water Systems for the City of the Future</i>   |
| Mr. Komakech          | Uganda       | vd Zaag              | <i>Agent-based modelling for collaborative catchment water resources management in the Pagani river basin, Tanzania</i>                      |
| Mr. Kuntiyawichai     | Thailand     | Schultz/Uhlenbrook   | <i>Flood management and land use in the Chi River basin, Thailand</i>  |
| Mr. Lai Ko An         | China R.O.C. | v Maarsseveen (TUT)  | <i>An analysis of environmental capacity characteristics of heterogeneous traffic corridors</i>  |
| Mrs. Lamei            | Egypt        | vd Zaag              | <i>Decision support system for investing in integrated water resources management in arid coastal regions</i>                                |

**REGISTERED PHD FELLOWS**

| NAME                    | COUNTRY     | PROMOTOR               | WORKING TITLE THESIS   |
|-------------------------|-------------|------------------------|--|
| Mrs. Latteman           | Germany     | Amy                    | <i>Development of an environmental impact assessment and decision support system for seawater desalination plants</i>                    |
| Mr. Lesser              | New Zealand | Roelvink               | <i>Numerical modelling of waves, currents, sediment transport and coastal morphological change in three dynamic estuary mouths</i>       |
| Ms. Li Hong             | China P.R.  | Mynett                 | <i>Spatio-temporal analysis and simulation of population dynamics in lakes and estuaries</i>   |
| Mrs. Liang              | China P.R.  | v Dijk                 | <i>Financing and cost recovery of innovations in the urban water cycle in terms of different institutional and technological options</i> |
| Mr. Limsiri             | Thailand    | Schultz/Nieuwenhuis    | <i>Very soft organic clay applied for road embankment</i>  |
| Mr. Lopez Vazquez       | Mexico      | Gijzen/Loosdrecht      | <i>Effect of high temperature on filamentous bulking sludge in activated sludge systems</i>  |
| Mr. Love                | Zimbabwe    | vd Zaag/Uhlenbrook     | <i>Land/water/livelihood strategies and water resources availability</i>   |
| Mrs. Lugwisha           | Tanzania    | Leentvaar              | <i>Wastewater management institutional performance and change</i>  |
| Mr. Lutterodt           | Ghana       | Uhlenbrook             | <i>Groundwater quality and bio-colloid transport in peri-urban areas near Accra, Ghana</i>   |
| Mr. Mabiza              | Zimbabwe    | vd Zaag/Gupta          | <i>IWRM, institutions and livelihoods: cases and perspectives from the Limpopo River Basin</i>   |
| Mr. Maeng               | South Korea | Amy                    | <i>Framework for Assessment of Performance of Riverbank Filtration System</i>  |
| Mr. Makurira            | Zimbabwe    | Savenije               | <i>Smallholder water system innovations for upgrading rainfed agriculture in arid and semi-arid areas</i>                                |
| Mr. Masih               | Pakistan    | Rijsberman/ Uhlenbrook | <i>Hydrology and water balance analysis for sustaining food security and environmental services in Karkheh River Basin, Iran</i>         |
| Ms. Mohhtar-Nazer       | Palestine   | Gijzen                 | <i>From water scarcity to sustainable water use in the West Bank, Palestine</i>  |
| Ms. Mul                 | Netherlands | Savenije               | <i>Balancing water for crop production and ecosystems at subcatchment and catchment scale</i>  |
| Mr. Munir               | Pakistan    | Schultz                | <i>Role of sediment transport in operation and maintenance of supply and demand based irrigation canals</i>                              |
| Mr. Mutikanga           | Uganda      | Vairavamoorthy         | <i>Decision Support Tools for Water Loss Management in Kampala City</i>  |
| Ms. Nacorda             | Philippines | vVierssen              | <i>Effects of burrowing invertebrates on sediment and seagrass dynamics along a siltation gradient</i>                                   |
| Mr. Nguyen              | Vietnam     | Savenije               | <i>Study of evolution of salinity in Mekong River Delta, Vietnam</i>   |
| Mr. Ntow                | Ghana       | Gijzen                 | <i>The use and fate of pesticides in vegetable-based agroecosystems in Ghana</i>   |
| Mr. Oduro-Kwarteng      | Ghana       | Amy                    | <i>Anaerobic digestion of municipal solid waste: batch technology assessment and transfer to a devolving country</i>                     |
| Mr. Ofusu               | Ghana       | vd Zaag/vd Giesen      | <i>Irrigation Development and catchment management in the White Volta Sub-Basin</i>  |
| Mr. Owusu-Ansah         | Ghana       | vd Zaag                | <i>Near-real time monitoring of flows in the Volta basin using variational data assimilation</i>   |
| Mr. Paudel              | Nepal       | Schultz                | <i>An improved approach for the design and management of irrigation canals</i>   |
| Mr. Salinas Rodriguez   | Bolivia     | Amy                    | <i>Water characterisation and fouling prediction tools for Seawater Reverse Osmosis Systems</i>  |
| Ms. Sanz Galindo        | Colombia    | vd Zaag/Gupta          | <i>Developing conflict resolution as a policy tool for small and medium enterprises</i>  |
| Mr. Sekomo              | Rwanda      | Gijzen                 | <i>Mechanisms of heavy metals removal in natural wastewater treatment systems</i>  |
| Mr. Shrestha            | Nepal       | Price                  | <i>Computational intelligence and uncertainty modelling in flood forecasting</i>   |
| Mr. Siek                | Indonesia   | Price                  | <i>Predicting ocean surges: multi-models, computational intelligence, chaos and uncertainty</i>  |
| Mr. Silva Vinasco       | Colombia    | Gijzen                 | <i>Greenhouse gas emissions from ecotechnologies for sustainable domestic wastewater management in tropical regions</i>                  |
| Mr. Solomon             | Ethiopia    | Price                  | <i>Integrated urban water systems modelling</i>  |
| Ms. Tabatabai           | Iran        | Amy                    | <i>under construction</i>  |
| Mr. Uwamariya           | Rwanda      | Amy                    | <i>Assessment of ground as source of drinking water in Rwanda</i>  |
| Mr. Valencia            | Mexico      | Gijzen                 | <i>The sustainable use of bioreactor landfill techniques in the Netherlands</i>  |
| Mr. Velez Quintero      | Colombia    | Price                  | <i>Real time control in integrated urban water management</i>  |
| Mr. Verma               | India       | vdZaag                 | <i>Groundwater recharge movement in India</i>  |
| Mr. Wong                | Malaysia    | Uhlenbrook             | <i>Impact of variability and heterogeneity of hydro-climatological parameters on the hydrology in Malaysia</i>                           |
| Mr. Yangali Quintanilla | Peru        | Amy                    | <i>Rejection of pharmaceutically active and endocrine disrupting compounds by low and high pressure membranes</i>                        |
| Mr. Ye                  | China P.R.  | Roelvink               | <i>A generic morphodynamical model and its validation</i>  |
| Mr. Zhou                | China P.R.  | Vairavamoorthy         | <i>under construction</i>  |





| <b>CAPACITY BUILDING</b>         |   |                        |   |              |            |
|----------------------------------|---|------------------------|---|--------------|------------|
| <b>COUNTRY</b>                   | <b>TITLE</b>  | <b>FUNDING</b>         | <b>PARTNERS</b>   | <b>START</b> | <b>END</b> |
| <b>China</b>                     | Real-Time Monitoring & Management System for Water Resources in the Yellow River Basin                                    | ORET/MILIEV            | EARS (lead), MLR, YRWCC, HOFUNG   | Jul-04       | Dec-08     |
|                                  | Special training programme for young professionals of the Changjiang (Yangtze) Water Resources Commission                 | CWRC                   |   | Oct-06       | Apr-08     |
|                                  | Groundwater in Beijing  | Honor Power Foundation |   | Jun-07       | Jun-09     |
|                                  | Eco-provincial Development and Best Practices   | NUFFIC                 | WUR   | Nov-07       | Mar-07     |
| <b>Egypt</b>                     | Alexandria Lake Mariout Integrated Management   | EC/SMAP                | Medcities (lead), EUCC  | Jan-06       | Dec-08     |
| <b>Ghana</b>                     | Capacity Building for Sustainable Development of Water Resources and Environmental Sanitation in Ghana and the Sub-Region | NUFFIC/NPT             | DCE, Kwame Nkrumah University, IRC, TU Delft  | Jan-06       | Oct-06     |
| <b>Guatemala</b>                 | Training and Development for the Integrated Management of the Water Resources in the West of Guatemala                    | NUFFIC/NPT             | Servicios para el Desarrollo, Universidad del Valle Guatemala, Fundacion Solar (Guatemala). PoWER partners: Universidad del Valle (Colombia). | Jan-06       | Dec-08     |
| <b>Indonesia</b>                 | Water Resources and Irrigation Management (WRIM) Capacity Building Network Project  | NUFFIC/NPT             | P.T. IHE Indonesia, WUR   | Nov-05       | Dec-09     |
|                                  | Strengthening Capacity in Water Sector with special focus on Ministry of Public Works                                     | PvW III                | DHV   | Oct-07       | Mar-08     |
|                                  | Capacity Building on Waste Management & Sustainable Energy in Indonesia   | EVD-Indonesia facility | BGP   | Oct-07       | Jun-09     |
|                                  | Implementation of a Master Program for Staff of the Ministry of Public Works  | WSIMP - WB             |   | Oct-07       | Apr-09     |
| <b>Iran, Islamic Republic of</b> | Training and Capacity Building for the Water and Wastewater sector in Iran  | World Bank             | PWUT  | Nov-07       | Jun-09     |
| <b>Iraq</b>                      | Training and Capacity Building for Water Resources planning and Management for Iraq                                       | USACE / Iraq-MWR       |   | Oct-06       | Apr-08     |
| <b>Lebanon</b>                   | Capacity Building for Groundwater Quality Monitoring  | PVW III                | TNO, AUB, Ministry of Environment   | Nov-07       | May-09     |
| <b>Mexico</b>                    | Modelling of Waste Water Treatment processes in Mexico  | PvW                    | TU Delft, ASM Design  | Apr-07       | Apr-08     |
| <b>Nepal</b>                     | Tailor made training on Planning and Management of water resources in outer villages in Dhading district                  | NUFFIC                 |   | Mar-07       | Apr-08     |
| <b>Netherlands</b>               | Development of a capacity building framework, especially in relation to the Ramsar Convention                             | RIZA                   | RIZA, WetCap, Ramsar, Delta Institute, Delft hydraulics   | Jan-07       | Oct-07     |
|                                  | Short course Knowledge Management for officials of Chinese partners in Marine Geo-scientific research                     | TNO                    |   | Jan-07       | Mar-07     |
| <b>Peru</b>                      | Group training on Integrated Water Resources Management   | NFP-TM                 | WUR   | May-06       | Jan-07     |
| <b>Rwanda</b>                    | Rwanda NUR MSc Programme in Water Resources and Environmental Management  | NUFFIC/NPT             | ITC, KNUST  | Jan-06       | Oct-08     |
| <b>Syrian Arab Republic</b>      | Integrated Water Resources Management Plan Orontes Basin Syria  | DHV                    | DHV, TNO NITG, Acacia, Elard (Syria)  | Feb-06       | Dec-07     |
| <b>Vietnam</b>                   | Upgrading the Training Capacity in Coastal Engineering of the Hanoi Water Resources University, Phase 2                   | RNE                    | DUT, CICAT(lead), WL  | Oct-05       | Sep-09     |
| <b>Zimbabwe</b>                  | WaterNet Strategy-Phase II: 2005-2009   | SIDA, DGIS             | PoWER partners: University of Zimbabwe, WaterNet  | Jan-06       | Dec-08     |
| <b>Various Countries</b>         | Partnership for Water Education and Research (PoWER)  | DGIS                   |   | Jan-02       | Dec-07     |
|                                  | Water Data Banks - Phase 4, Middle East Region: Israel, Jordan, Palestine Authority                                       | EC/EuropeAid           | DHV (lead), DHI Water & Environment, Engicon, DHVMED, Palistinian Hydrology Group   | Jan-04       | Mar-08     |

| CAPACITY BUILDING  |   |                          |  |        |        |
|--|---|--------------------------|--|--------|--------|
| COUNTRY  | TITLE   | FUNDING                  | PARTNERS   | START  | END    |
| Various Countries  | Improving Municipal Wastewater Management in Coastal Cities in ACP Countries  | EC/ACP-EU-Water Facility | UNEP/GPA, UN/DOALOS, GEF   | Sep-05 | Sep-08 |
|  | Human Resources Development for the improvement and protection of environment in Asia   | Asialink/EC              | TU Delft, Leiden uni, Chongqing University, Indian Institute of Technology Delhi, Tianjin University, Technical University Berlin                    | Jan-06 | Dec-07 |
|  | Knowledge Networks for the Nile Basin, Using the innovative potential of knowledge networks and CoP's in strengthening human and institutional research capacity in the Nile region | DGIS/DCO                 | 10 selected uiversities and ministries from Nile Basin Countries. PoWER partners: Hydraulic Research Institute (Egypt), Makerere University (Uganda) | Jan-06 | Jul-09 |
|  | Technology enabled universal access to safe water (TECHNEAU)  | EC/FP6                   | 21 partners including Kiwa, SINTEF, Riga Tech.Uni. EAWAG, NTNU, TZW, LNEC  | Jan-06 | Jan-11 |
|  | Small Scale Water Treatment Facilities for Domestic Use and Artificial Recharge with Surface Water - Middle East  | DGIS                     | Water Commission/mekorot Water Company (Israel); Min. of Water snd irrigation (Jordan); PoWER partner: Birzeit University (Palestinian Authority)    | Jan-06 | Mar-10 |
|  | Wetlands and Poverty Reduction project Training module  | Wetlands International   | Wetlands International   | Aug-06 | Jun-07 |
|  | EU-Medina Desalination Membrane-based Desalination: an Integrated Approach  | EC                       | Universita della Calabria, Italy; Kiwa, IWW, Ben Gurion University and others  | Dec-06 | Dec-09 |
|  | A knowledge Network for solving real-life water problems in developing countries  | EC-FP6                   | Dep.Architecture & Urban Planning, LeAF, SMI, IMTA, ENGREF, CSE, IIMA, RSPMU   | Apr-07 | Mar-10 |
|  | Integrated Urban Waste Water System Data Network  | PoWER                    |  | Aug-07 | Jan-08 |
| Conflict curriculum for transboundary floods in the Mekong | MRC   |                          | Dec-07   | Dec-07 |        |

| ADVISORY SERVICES    |  |                              |   |        |        |
|----------------------|--|------------------------------|---|--------|--------|
| COUNTRY              | TITLE  | FUNDING                      | PARTNERS                                  | START  | END    |
| Colombia             | Integrated Urban Wastewater System Data Network (DataNet)  | PoWER                        | Cinara/ Universidad del Valle             | Jul-07 | Dec-07 |
| Croatia              | Production of live and smoked eels in Croatia  | Senter/PSO                   |   | Jun-04 | Dec-07 |
| Mongolia             | Advisory service for Aqua-Vitens on water distribution system in Ulan Bator  | Vitens                       |   | Sep-07 | Oct-07 |
| Mozambique           | Synchronization and Regulation of Environmental Flows in Kafue, Kariba and Cahora Bassa Dams   | WWF Mocambique Coord. Office |   | Aug-07 | Nov-07 |
| Netherlands Antilles | Assessment of Arsenic Removal Technologies   | Ecol. Management Found.      |   | Jul-07 | Sep-07 |
|                      | Studying Alternative Infrastructure for Disposing Waste from Underprivileged Urban Settlements in Colombo  | IDRC-Canada                  | Sevanatha (local NGO)                     | Nov-07 | Feb-08 |
| Yemen                | Advice on ToR of an EIA study on two large dams  | NCEIA                        |   | Sep-07 | Nov-07 |
| Various Countries    | Pilot River Basin Plan for Sava River (Croatia, Bosnia and Herzegovina, Serbia and Montenegro)   | EC/EuropeAid                 | SAFEGE (Belgium, lead), Univ. of Belgrade | Dec-04 | Oct-07 |
|                      | Evaluation of DGIS's Sectoral Approach in Water and Environment  | DGIS                         | CDP-consultants (lead)                    | Jan-07 | Dec-07 |
|                      | Forum facilitator for the provision of technical and mangerial assistance/advice for the organisation and implementation of the 5th Annual Mekong Flood Forum (AMFF-5) | MRC                          |   | Feb-07 | Jun-08 |
|                      | Workshop on transboundary river basin management   | RIKZ                         |   | Mar-07 | Apr-07 |
|                      | Support to the Spate Irrigation Network  | EC                           | MetaMeta (NL)                             | Jun-07 | Dec-07 |
|                      | FMMP Component 2: Structural Measures and Flood Proofing   | MRC                          | Haskoning, WL                             | Oct-07 | Dec-08 |
|                      | IFAD Options paper on Spate Irrigation and Climate Change  | IFAD                         | MetaMeta (NL)                             | Dec-07 | Mar-08 |

| EDUCATION AND TRAINING |  |                                 |  |        |        |
|------------------------|--|---------------------------------|--|--------|--------|
| COUNTRY                | TITLE  | FUNDING                         | PARTNERS   | START  | END    |
| Bhutan                 | Tailor made training on Participatory Approach on Water, Sanitation and Hygiene Management                                       | Nuffic                          | IRC  | Sep-07 | Oct-07 |
| Brazil                 | Short Course Hydroinformatics for practitioners  | Itaipu Binacional               |  | Oct-07 | Dec-07 |
| China                  | Special Training Programme for Young Professionals of the Yellow River Conservancy Commission                                    | Dept of Int. Cooperation, China |  | Oct-05 | May-07 |
|                        | Support for the development of strategic co-operation between China P.R. and the Netherlands in the area of estuaries and coasts | RWS/RIZA                        | RWS-RIKZ, Ho Hai, Nanjing Hydraulic Research Institute, Yangtze Estuary waterway administration, Yangtze Water Resources Commision | May-06 | Dec-07 |

| EDUCATION AND TRAINING |   |                                      |  |        |        |
|------------------------|---|--------------------------------------|--|--------|--------|
| COUNTRY                | TITLE   | FUNDING                              | PARTNERS   | START  | END    |
| China                  | Yellow River Evaluation Seminar   | RIKZ, V&W                            |  | Aug-07 | Dec-07 |
| Costa Rica             | Urban Water Management in the Coastal Zones   | Nuffic                               | Aya  | Jan-07 | Dec-07 |
| Ecuador                | WB GDLN Sessions - Ecuador  | WB                                   |  | May-07 | Jul-07 |
| Indonesia              | Blended training course on wetland management and for Indonesian Professionals  | Netherlands Embassy                  | Biotrop  | Apr-07 | Aug-07 |
| Iraq                   | Short Course for MoWR Iraq 2007 as part of the training and capacity building for Water Resources Planning and Management for Iraq  | Ministry of Water Resources Iraq     |  | Oct-06 | Dec-07 |
| Netherlands            | I-learning course on Process Design and Engineering of Biological Wastewater Treatment  | PowER/K-water                        | Birzeit, Monterrey, K-Water  | Dec-06 | Sep-08 |
|                        | WWF College IRBM module   | WWF International, Zeist Netherlands |  | Jan-07 | Nov-07 |
|                        | Development of module on Water and Climate  | PoWER                                | Universidad del Vall, Colombia, TEC Monterrey Mexico, University of Taiwan, Bogo Agricultural University | Sep-07 | Dec-07 |
|                        | Preparation On-line course Urban Groundwater Pollution  | PoWER                                | PoWER partners   | Sep-07 | Dec-07 |
|                        | Preparation On-line course on Water Quality Assessment  | PoWER                                | WaterNet, Mondlane, other PoWER partn.   | Sep-07 | Dec-07 |
| South Africa           | Training in PPP-Water Silulumanzi   | Silulumanzi                          |  | Sep-07 | Dec-07 |
| Syrian Arab Republic   | Improving Wastewater management in Syria, back to back with Seminar on The Best Environmental Practices in the Textile Industry in Syria  | UNEP-GPA                             | Delft Environment  | Sep-07 | Sep-07 |
| Thailand               | Online course on Service Oriented Management of Irrigation Systems  | UNESCO-IHE, AIT Bangkok              |  | Aug-07 | Feb-07 |
| Zambia                 | Refresher Course on Water Services: Reaching the poor in peri-urban areas in Sub Saharan Africa   | Nuffic                               | University of Zambia, Lusaka Water & Sewege Company, WaterNet  | Jan-07 | Dec-07 |
| Various Countries      | Water Sector capacity Building in Support of the Millenium Development Goals  | DGIS                                 |  | Oct-04 | Mar-08 |
|                        | Refresher Course on Institutional Development and Capacity Building Needs for Integrated River Basin Management: a cross-basin blended learning course in Yangtze and Nile Basins | Nuffic                               | HRI, NHRI, CapNet  | Jan-07 | Dec-07 |

| POLICY FORUM AND DEVELOPMENT |   |         |                |        |        |
|------------------------------|---|---------|----------------|--------|--------|
| COUNTRY                      | TITLE   | FUNDING | PARTNERS       | START  | END    |
| Netherlands                  | Verwijderen Natuurlijk Organisch Materiaal (NOM)                                | SENER   | TUD and others | May-06 | May-10 |
| Various Countries            | Policy Note on Urban Water Utilities  | DGIS    | IRC            | Mar-07 | May-07 |
|                              | Symposium on Water for a Changing World, Enhancing Local Knowledge and Capacity | NUFFIC  |                | May-07 | Jun-07 |

| RESEARCH AND DEVELOPMENT |   |                             |                        |        |        |
|--------------------------|---|-----------------------------|------------------------|--------|--------|
| COUNTRY                  | TITLE   | FUNDING                     | PARTNERS               | START  | END    |
| Belgium                  | Aquaplan  | DGTRE                       | University of Louvain  | Jul-06 | Aug-08 |
| Denmark                  | Wave run-up and overtopping of sea dikes with and without Stilling Wave Basin under 3D wave attack  | DHI-Denmark with EU support | Gebr. Kraan ea         | Sep-05 | Dec-07 |
| Egypt                    | Management Info on Water Quality in the Nile Basin  | PoWER                       |                        | Sep-04 | Dec-07 |
| Hungary                  | EU Life SUMANAS Project for Arsenic Removal in Hungary and Romania  | SELOR/EC                    | Vitens                 | Oct-07 | Nov-09 |
| India                    | Early Floodwarning Systems for Ungauged Basins  | PoWER                       | Vitens                 | Oct-07 | Dec-07 |
| Indonesia                | Development pilot polder Semarang and Guideline Polder development  | PvW II                      | Witteveen + Bos        | May-07 | Feb-09 |
| Luxembourg               | Genesis of Floods   | Delft Cluster               |                        | Oct-06 | Dec-08 |
| Netherlands              | Delft Cluster Phase II: development of wetlands   | Delft Cluster               | GeoDelft, TNO, TUD, WL | Jan-04 | Dec-08 |
|                          | Delft Cluster Phase II: KRW Tools Knowledge exchange and dissemination of the project results on developing modelling tools in support of the implementation of the Water Framework Directive | BSIK/DC                     | Delft Cluster partners | Jan-04 | Aug-08 |
|                          | Delft Cluster Phase II: Urban Water Management  | Delft Cluster/TNO NITG      | Delft Cluster Partners | Jan-04 | Dec-08 |
|                          | Delft Cluster phase II: Drink Water, Top Quality for 21st century, Water Quality in Distribution Systems  | Delft Cluster               | Delft Cluster Partners | Jan-04 | Dec-07 |
|                          | Delft Cluster phase II: Innovative Drink Water treatment, Removal of Micropollutants from drinking water  | Delft Cluster               | Delft Cluster Partners | Jan-04 | Dec-07 |

| RESEARCH AND DEVELOPMENT |  |                            |  |        |        |
|--------------------------|--|----------------------------|--|--------|--------|
| COUNTRY                  | TITLE  | FUNDING                    | PARTNERS   | START  | END    |
| Netherlands              | Delft Cluster Total Systems Analysis Natural Organic Matter  | Delft Cluster              |  | Apr-04 | Dec-07 |
|                          | Delft Cluster Phase II: Safety against Flooding: WP A3 Hybrid Modelling  | Delft Cluster              | Delft Cluster Partners   | Jan-05 | Dec-08 |
|                          | Delft Cluster Phase II: Preparation Urban Water Cycle  | NL Gov. / BSIK             | Delft Cluster Partners   | Apr-05 | Apr-09 |
|                          | Delft Cluster Phase II: Safety against Flooding: Natural Hazards, Strength of flood defence structures   | NL Gov. / BSIK             | Delft Cluster Partners   | Jun-05 | Dec-08 |
|                          | Delft Cluster 42/WP CT 043211 River Morphology   | Delft Cluster              | Delft Cluster Partners   | Nov-06 | Dec-08 |
|                          | Optimal Membrane systems: control & prevention of (bio)fouling   | SENTER                     | WMD, Norrit  | Dec-06 | Dec-09 |
|                          | Enforcement Improvement on Trans-boundary Water management using SEEA-W and Tradeable Permit Systems case study on the Rhine (The Netherlands and Germany)                   | Inspectie V&W              |  | Apr-07 | Oct-07 |
|                          | Water Management in Extreme Conditions   | Delft Cluster              |  | Aug-07 | Dec-10 |
|                          | Delft 3D model for steady state overbank flow conditions   | EPSRC                      |  | Oct-07 | May-09 |
| Oman                     | Research on Minimizing the Use of Chemicals in Sea Water Reverse Osmosis- impact on scaling and concentrate disposal   | MEDRC                      |  | Feb-07 | Feb-10 |
| United States            | Modelling of hurricane impacts   | US Army Corps of Engineers | TU Delft, WL   | Mar-06 | May-09 |
| Vietnam                  | Re-hydrating the earth by sustainable, small-scale sub-surface water retention techniques  | PvW II                     | Royal Haskoning, TU Delft, Westerfield Conservation  | Jan-07 | Apr-08 |
| Various Countries        | Challenge of Integrated Water Resources Management for Improved Rural Livelihoods (Limpopo)  | CP/CGIAR                   | WaterNet   | Jan-04 | Dec-08 |
|                          | Delft Cluster Phase II: The Mekong Case: Developing Economically Sound and Environmentally Friendly Standards for the Planning and Design of Roads in the Mekong Floodplains | Delft Cluster              | Delft Cluster partners   | Jun-05 | Dec-08 |
|                          | Delft Cluster phase II: Morphodynamics of North Sea and coast and coastal defences   | BSIK                       | Delft cluster partners   | Jun-05 | May-07 |
|                          | Water reclamation technologies for safe artificial groundwater recharge  | EC/FP6                     | 16 total, Rheinisch Westfälische Technische Hochschule Aachen is leading party   | Oct-05 | Sep-08 |
|                          | Integrated Flood Risk Analyses and Management Methodologies  | EC/FP6/SUSTDEV             | HR Wallingford Ltd. (lead), WL a.o.  | Jan-06 | Dec-08 |
|                          | Sustainable Water management Improves Tomorrow's Cities' Health  | EC/FP6/SUSTDEV             | 32 in total: UNESCO-IHE (lead), IRC and many others. PoWER partners: Universidad del Valle (Colombia), Kwame Nkrumah University of Science and Technology (Ghana). | Feb-06 | Jan-11 |
|                          | Early Floodwarning Systems for Ungauged Basins   | PoWER                      | Indian Institute of Technology Roorkee, India  | Nov-07 | Feb-29 |

|        |   |
|--------|---|
| DGIS   | Netherlands Ministry of Foreign Affairs   |
| EC     | European Commission   |
| IDB    | Inter-American Development Bank   |
| IRF    | Internal Research Fund IHE  |
| NUFFIC | Netherlands Organisation for International Cooperation in Higher Education                  |
| NWO    | Nederlandse Organisatie voor Wetenschappelijk Onderzoek                                     |
| RNE    | Royal Netherlands Embassy   |
| SAIL   | Capacity building programme through NUFFIC  |
| SENTER | SenterNovem, Agentschap voor duurzaamheid en samenwerking (of Ministry of Economic Affairs) |
| V&W    | Ministry of Transport, Public Works and Water Management                                    |
| WB     | Worldbank   |

| RESEARCH THEMES AND RESEARCH LINES           |   |   |
|--|---|---|
| THEMES                                       | CORE  | RESEARCH LINE   |
| <b>Environmental Integrity</b>               | Pollution Prevention and Control                | Cleaner production and the water cycle<br>Eco-technologies  |
|  | Freshwater Ecosystems                           | Planning for integrated river basin management<br>Wetland management<br>Environmental water allocation  |
| <b>Water Management and Governance</b>       | Capacity Building                               | Institutional analysis and reform processes<br>Strengthening and developing organisations<br>Human resources development  |
|  | Water Resources Management                      | Bio-physical processes (efficient use)<br>Institutional dimensions (good governance)<br>Integrative properties (sustainable systems)  |
|  | Water Services Management                       | Institutional options for water and sanitation<br>Establishment and functioning of river basin organisations<br>Organisational change in the water sector<br>Strategic management of drinking water utilities<br>Equity and participation issues in water services management |
| <b>Urbanisation</b>                          | Sustainable Urban Infrastructure                | Urban water networks<br>Water distribution systems<br>Urban drainage<br>Wastewater collection systems<br>Flood resilience of urban areas  |
|  | Urban Water Supply & Sanitation                 | Improving/enhancing conventional drinking water and wastewater treatment<br>Natural drinking water and wastewater treatment systems<br>Advanced drinking water and wastewater treatment   |
| <b>Water Security</b>                        | Hydraulic Engineering & River Basin Development | Hydraulic structures and hydraulic processes<br>Environmental impacts of water-related projects<br>Management of floods and droughts  |
|  | Coastal Engineering & Port Development          | Integrated coastal modelling<br>Performance and reliability of flood defence systems and coastal structures<br>Integrated coastal zone management<br>Ports and inland waterways   |
|  | Land & Water Development                        | Hydraulic structures and hydraulic systems<br>Environmental impacts of hydraulic works<br>Institutional aspects of system management<br>Integrated lowland development  |
|  | Hydrology and Water Resources                   | Hydrology and climate (hydrological processes and process-based modelling)<br>Physical and biogeochemical processes of groundwater systems  |
| <b>Information and Communication Systems</b> | Hydroinformatics                                | Modelling paradigms, uncertainty and risk<br>Systems engineering and optimisation<br>Collaborative decision making and Internet-based computing and learning  |

## ARTICLE IN JOURNAL

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## List of Illustrations

In honour of its 50th anniversary, UNESCO-IHE organised a worldwide photo competition to show what impact the Institute has had throughout the years and what water means to people. More than a 150 photos were received, and a few were selected to illustrate this Annual Report.

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