

ANNUAL REPORT 2005

UNESCO-IHE
Institute for Water Education



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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. In 2003 UNESCO and the Government of the Netherlands transitioned IHE Delft into the UNESCO-IHE Institute for Water Education.

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 13,000 water professionals from 162 (developing) countries. More than 50 PhD candidates have been promoted from the Institute, and numerous research and capacity building projects have been carried out throughout the world. Alumni reach senior positions in their home countries and become nationally and internationally recognised experts in their fields of speciality. 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 World Water Fora, the World Summit on Sustainable Development, and the Commission on Sustainable Development.

DIRECTOR'S STATEMENT



The year 2005 will certainly be recorded as one in which we not only set ambitious goals, but one in which we managed to accomplish more than I thought possible. The pace of the Institute notably quickened and, given our commitment to the task, I firmly believe that the multitude of aims we are pursuing are leading us to making a tangible difference in the ability of our client governments to manage their water resources more effectively. As is clearly demonstrated in this annual report, we addressed priority issues affecting our principle mandates in education, research and capacity building. Additionally, we made substantive progress in clarifying our role and responsibilities within the larger UNESCO context. We still have a lot of work to do in the coming years, but we continue to make progress.

I am very pleased with what we accomplished in 2005. In that regard, I would like to note that this Institute is healthy academically, administratively, and financially. We have a vision and we are pursuing that vision. That is not to say that there aren't challenges such as the subsidy level, the diversity and stability of the funding base for fellowships, and our ongoing drive for academic excellence, but on all these fronts we are making substantive progress.

Our education programmes and our commitment to maintain overall academic excellence underpin all other activities of the Institute. Without this pillar, we run the risk of losing the confidence placed in us by UNESCO Member States and our participants. We look forward to continuing to serve the interests of the Member States and in particular the needs of developing and transition countries in the water sector.

A handwritten signature in blue ink, appearing to read 'R. Meganck'.

Richard A. Meganck
Director

2005 AT A GLANCE UNESCO-IHE IN NUMBERS

STATISTICS

166 staff of which 92 academic and 74 support

4 water and Environment Related Master Programmes with 14 specialisations

83 MEng degrees and 98 MSc degrees awarded

193 MSc participants from 66 countries

58 registered PhD fellows

6 PhD graduations

366 water sector professionals in short courses

83 participants in the first run of 6 on-line courses

231 Scientific Publications

121 Capacity Building and Advisory Projects

Total turnover of €23 million, overall positive result of €20,000



EDUCATION

- Academic programmes and calendar were restructured to accommodate an MSc-only programme
- Preparation for the formal accreditation of all Master programmes, with the self-study reports as an important component
- Six on-line courses implemented in a distance-learning format

RESEARCH

- Research plan developed by each core group, setting the stage for an Integrated Institute Research Plan
- A Family Filter for removing arsenic from groundwater was developed that could help save millions of lives
- FP6 SWITCH urban water management research project formulated and approved by the EC
- Effective start of Delft Cluster phase II, which aims to produce scientific knowledge for vulnerable Delta regions





CAPACITY BUILDING AND ADVISORY PROJECTS

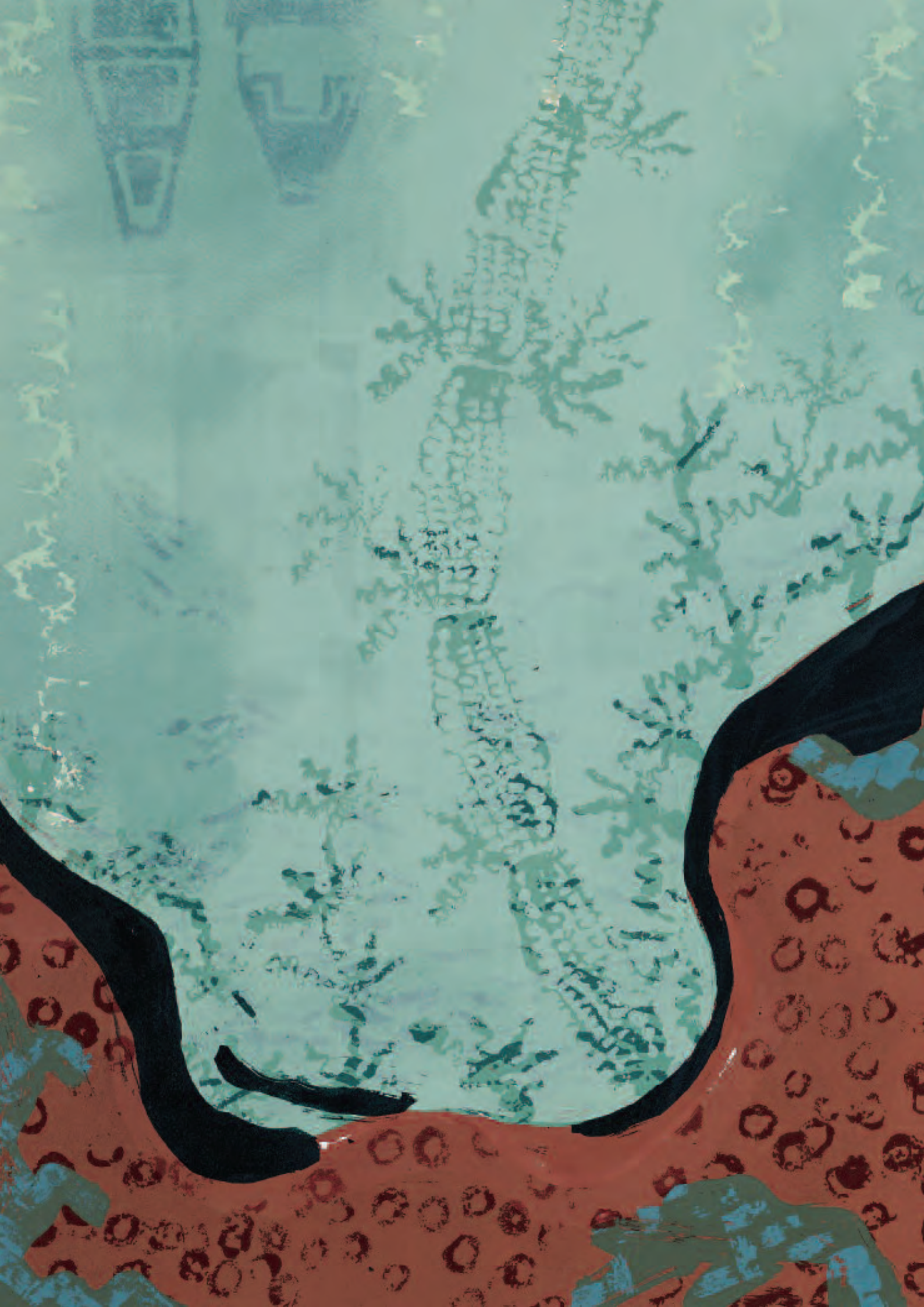
- Total turnover of € 7,85 million and fee income of € 2.69 million
- Launch of the CKNet knowledge network that will be undertaken by ten Indonesian universities to support the implementation of the national environmental and development plan
- Funding secured for the next phase of the following projects:
 - Capacity Building for Sustainable Development of Water Resources and Environmental Sanitation in Ghana and the Sub-Region
 - Knowledge Network for the Nile Basin involving all ten Nile Basin countries
 - Development of a water resources education and research capacity with the National University of Rwanda
 - WaterNet, a network of knowledge institutions and professional organisations in the sub-Saharan region
- Comprehensive advice compiled for the Government of St. Maarten regarding their sewage and drinking water system

PARTNERSHIPS AND NETWORKING

- The Partnership for Water Education and Research (PoWER) formulated a vision on partnership programme development for 2006-2010 stressing the development of joint research and on-line courses.
- The Virtual Alumni Community platform (VAC) was launched and a part-time alumni officer appointed.
- Memoranda of Understanding signed with Delft University of Technology, Yunnan University in China, and the Netherlands Environmental Assessment Agency

OVERALL DEVELOPMENT OF THE INSTITUTE

- Five new Full Professors welcomed
- Approval of the Academic Plan providing guidelines for the long term academic development of the Institute
- Concept and funding strategy for the UNESCO-IHE Partnership for Water Education developed, with the aim to create a sense of collective ownership among UNESCO Member States
- Launch of the Academic Quality Assurance (AQA) system in order to systematise the Institute's quality assurance policies, best practices and procedures
- Fellowship Trust Fund operationalised and first participants funded
- Establishment of the PACT Cultural Committee with the Water Concert as their main activity





CORE ACTIVITIES

Master Programmes and Specialisations offered in 2005-2006.

MSc Programmes	Specialisations
Environmental Science	Environmental Science & Technology Environmental Planning & Management Limnology & Wetland Ecosystems Water Quality Management
Water Management	Water Resources Management Water Services Management
Municipal Water & Infrastructure	Water Supply & Engineering Sanitary Engineering Integrated Urban Engineering
Water Science & Engineering	Hydrology and Water Resources Hydraulic Engineering - River Basin Development Hydraulic Engineering - Coastal Engineering & Port Development Hydraulic Engineering - Land & Water Development Hydro-informatics

MSc Programme	Participants	
	2004-2006	2005-2007
Environmental Science	42	45
Water Management	42	29
Municipal Water & Infrastructure	47	29
Water Science & Engineering	92	90
Total	223	193

CORE ACTIVITIES

EDUCATION

Degree programmes offered at UNESCO-IHE in 2005 included the 12-month Master of Engineering (MEng), the 18-month Master of Science (MSc), and the 4-year Doctor of Philosophy (PhD) programme. During the 2004-2005 period, the MEng was offered for the last time. An overview of the Master Programmes and their Specialisations are presented in the table.

From the start of the 2005-2006 academic year, the specialisation Water Services Management was no longer offered in the Municipal Water and Infrastructure Programme; it was however maintained as a specialisation at the Water Management Programme. The Surface Water Hydrology and Groundwater Hydrology specialisations were merged into one specialisation Hydrology and Water Resources. In 2005, 98 participants were awarded an MSc degree and 83 participants received a MEng degree. The total number of participants is shown in the overview table and more details on educational statistics are presented in Annex 1.

Besides the MSc programmes, UNESCO-IHE offers a full PhD programme, regular short courses, tailor-made courses, and on-line courses. In 2005, 58 PhD fellows were pursuing their research and six of them successfully graduated. An overview of the PhD research topics is presented in Annex 3. In the non-degree programmes, a total of

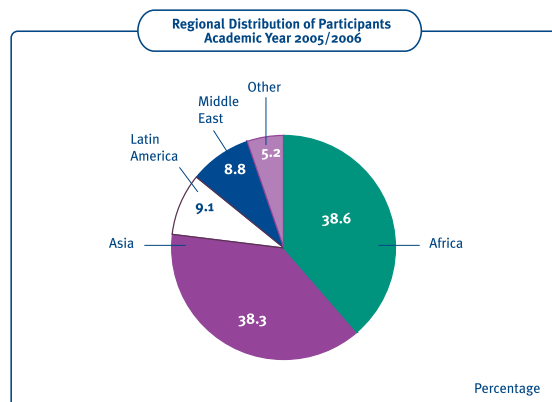
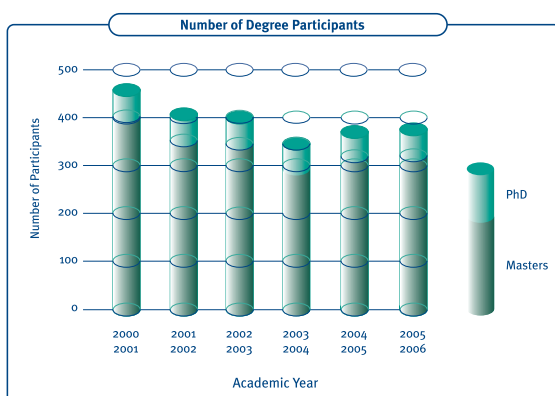
449 water sector professionals participated including 83 in the six on-line courses, which had their first run in 2005. Five regional refresher courses were organised for alumni. In Kenya the courses dealt with 'Water and Climate' and 'Solid Waste Management', in Tanzania a course on 'Environmental Flows for Rivers' was offered, and in China the courses covered the topics 'Ecological Sanitation' and 'River Basin Management'. An overview of all short and on-line courses is presented in Annex 2.

The Dutch Flemish Accreditation Organisation (NVAO) will likely formally renew the existing accreditation of the Master Programmes for the period 2008-2013 in mid 2006. Accreditation involves a review by an independent committee that investigates the educational quality of the Programmes. The actual review visit took place in December 2005, in preparation whereof comprehensive self-study reports were developed for each of the academic programmes. In their feedback immediately after the review visit, the committee indicated that their assessment was positive for all four programmes.

The Academic Quality Assurance (AQA) committee – responsible for formalising an internal quality assurance system for educational, research and project activities at the Institute – prepared a quality assurance manual. It describes the responsibilities of

various groups within the Institute and gives a description of the workflows. In November 2005, the quality assurance system was formally launched and a quality assurance manager appointed.

In November 2005 an Examination Board was installed. According to the Higher Education and Scientific Research Act for Dutch Universities, the Examination Board is responsible for the organisation and coordination of the examinations of the Master programmes. The Examination Board acts as an independent board and is installed as a permanent sub-committee of the Academic Board. The members of the Examination Board are listed in Annex 7.



CORE ACTIVITIES

RESEARCH

The accreditation process of UNESCO-IHE's Master Programmes highlighted the importance of research within the Institute. In putting forward a set of four Master of Science programmes for accreditation in which each student does an individual research project, it is vital that such projects are contained within and supported by a vigorous research environment. Academic and practical research at the Institute has therefore been focused on a range of issues supported by the global water agenda. Besides contributing to the overall knowledge base concerning the aquatic environment, research is also directed at education and capacity building, which are the other primary core activities of the Institute. After mature reflection, research results are fed into the syllabi of the Master Programmes, and a number of capacity building projects benefit from research insights in knowledge management and developments in knowledge systems. Increasingly research projects are being carried out collaboratively, not only in the context of the European Commission's Fifth and Sixth Framework programmes and Delft Cluster, but also with the growing network of PoWER partners around the world.

UNESCO-IHE continued to centre its research and development activities round five thematic thrusts: water security, environmental integrity, urbanisation, water management and governance, and information and communication systems as presented in detail in Annex 5. Within the thematic thrusts framework each academic core establishes its own research agenda. Towards the end of 2005 each full time professor drew up a strategy for his or her core which was then presented to the Academic Board. This in turn will serve as the basis for preparing a comprehensive research strategy for the Institute in 2006.

Research Outputs	Numbers	
	2004	2005
Journal articles	39	84
Books	4	7
Chapters in books	16	29
Paper in proceedings	69	87
PhD thesis	10	8
Other publications	53	16
Total	191	231

In 2005 the Institute was particularly successful in attracting major research projects. It was awarded the coordinating role of SWITCH, a European integrated project. This project on integrated urban water management brings together 32 northern and southern partners and combines research, training and demonstration activities. A number of other projects were also secured within the second phase of Delft Cluster, covering topics such as flood forecasting, coastal morphology, urban flooding, and anticipatory water management. The family filter to remove arsenic from groundwater was presented to the UNESCO Member States and a patent request for centralised arsenic systems submitted.



The Academic Plan for the Institute formulated in 2005 makes a number of recommendations for improving the quality of research undertaken. The Plan reviews the thematic thrusts of the Institute in relation to societal and market drivers, and realigns the academic foci of the professors and their associated cores, with corresponding consequences for the Institute's educational, research and capacity building activities. The Academic Plan puts a strong emphasis on increasing the number of publications in peer-reviewed journals and the number of PhD students graduating each year as ways of validating the scholarship of academic staff. Because of the strategic importance of research for its postgraduate education programmes the Institute introduced specific procedures in its AQA manual covering the quality assurance of research. Finally, the synergy between the Institute's research and that of its PoWER partners is improving, with PoWER funding proposals where the partners are preferred collaborators. An overview of all publications in 2005 is presented in Annex 6. PhD graduations are listed in Annex 3.

CORE ACTIVITIES

CAPACITY BUILDING

In 2005 the Institute introduced a system for becoming aware of and filtering project opportunities. This system, including an internal e-mail alert and a donor overview on intranet, is a response to the long-standing wish to become more pro-active in building a balanced and effective project portfolio.

At the end of 2004 the International Water and Sanitation Centre (IRC) invited UNESCO-IHE to take the lead in setting up a € 22 million European integrated project, called SWITCH. This project on integrated urban water management aims to build capacity of local governments through the learning alliance approach. Furthermore the Institute acquired two larger capacity building projects under the Netherlands Programme for the Institutional Strengthening of Post-Secondary Education and Training Capacities (NPT). One aims to strengthen the performance of the water sector in Indonesia with a focus on building capacity at leading Indonesian universities. The other is set in the western part of Guatemala and targets two NGOs and one university, enabling these institutions to provide training to municipal staff and authorities, institutional technicians and secondary school students. These new projects further contribute to a balanced regional spread of capacity building efforts. Funding has also been secured for the next phase of the projects 'Capacity Building for Sustainable Development of Water Resources and Environmental Sanitation in Ghana and the Sub-Region' and 'Development of a Water Resources Education and Research Capacity with the National University of Rwanda'.

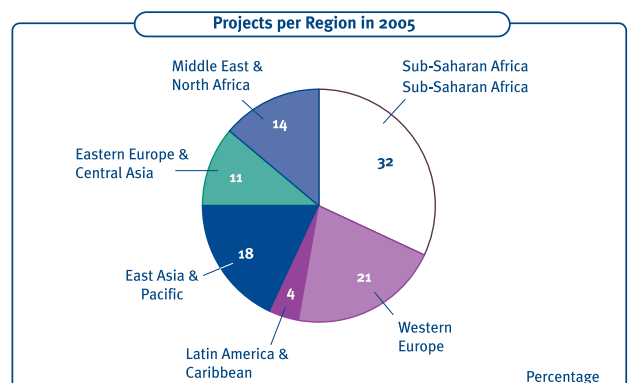
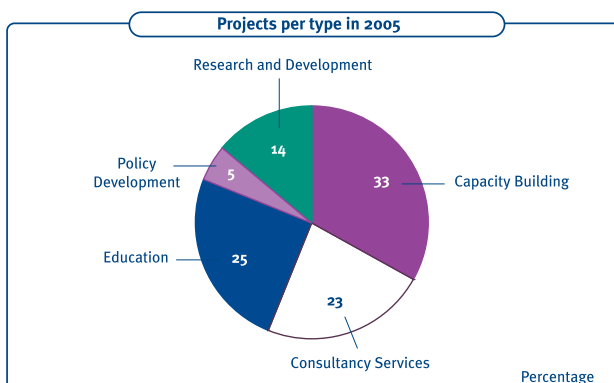
The sustainability of previous capacity building projects carried out under the SAIL programme is shown by current collaboration with former partners in these projects. For example the above-mentioned SWITCH project includes three former SAIL partners, Kwame Nkrumah University of Science and Technology (KNUST) in Ghana, Birzeit University in Palestine and Universidad del Valle in Colombia. The latter partner also played a crucial role in acquiring the NPT Guatemala project and will play an even more crucial role in the execution of this project. Other good examples include the leading role of the Hydraulics Research Institute in Egypt in UNESCO-IHE's capacity building activities in the Nile Basin. In 2005 a new commitment was made by the Dutch Ministry of Development Cooperation (DGIS) to increase efforts in the Nile Basin region by financing the strengthening of the Nile Basin Capacity Building Network for River Engineering (NBCBN-RE) and KNUST's participation in an NPT project in Rwanda. Finally the University of Zimbabwe is host of the secretariat of WaterNet's second phase and also hosts one of the two core Master Programmes of WaterNet. These examples illustrate the approach instituted several years ago, to strengthen regional institutions, and subsequently involve them in new capacity building efforts in their region. This approach will amplify the effectiveness and impact of UNESCO-IHE's capacity building efforts.

A unique feature of the second phase of WaterNet, which started in 2005, is that financial support is provided by two national governments. Where the first phase was supported exclusively by the Dutch government, the second phase is also receiving support from the Swedish government. This development makes UNESCO-IHE less dependent on Dutch funding and acknowledges its status as an international institute. The international status was also positively judged by the European Commission and seen as an added value in leading multilateral research projects.

Another programme that secured its second phase in 2005 is the Cooperative Programme on Water and Climate (CPWC), which aims to improve the capacity in water resources management to cope with the impacts of increasing variability of the world's climate. CPWC supports activities in the categories 'Coping Partnerships', 'Science and Research' and 'Education and Training'. The added value of CPWC to these activities is that it encourages partnership building and dissemination of research results.

Finally we wish to note the support provided to the Government of St. Maarten (Netherlands Antilles) when it approached UNESCO-IHE to be an independent evaluator of proposals to develop an integrated sewage and drinking water system for the Island territory. The issue has been a hot topic on the Island for several years and of interest to politicians, civil servants and the public at large. UNESCO-IHE chose a participatory approach, enabling all stakeholders to voice their opinion. These opinions together with a technical, social and economic analysis led to a balanced advice to the local government. In September 2005, the Island Government took a decision based on and following UNESCO-IHE's advice.

The total project turnover in 2005 was € 7,85 million. The complete overview of projects in which UNESCO-IHE was involved in 2005 is presented in Annex 4.



PARTNERSHIPS AND NETWORKS

Working in partnership has characterised the work of UNESCO-IHE in recent years. In 2005 this led to a process of rethinking the partnership concept, including not only the knowledge providers, but also sponsors and beneficiaries. In an effort to mobilise commitment from the international community for water sector capacity building in the framework of the Millennium Development Goals, UNESCO-IHE consulted a large number of UNESCO Member State representatives. The aim of these consultations was to make them part of the greater capacity development initiative of UNESCO-IHE.

At the centre of the partnership activities is the UNESCO-IHE Partnership for Water Education and Research (PoWER), which guides joint activities of a coalition of 18 education and research institutes in 15 countries. The partnership is registered with the UN Commission for Sustainable Development. The PoWER Panel of Rectors formulated a vision on partnership programme development 2006-2010 and approved an internal review, which was carried out in 2005. The vision stresses the development of joint research and the systematic development of on-line learning modules. Activities strengthening the educational capacity of the PoWER partners include workshops on 'Creative Learning Methods and Techniques' and 'Facilitators of On-line Learning Programmes', which were organised in collaboration with CAPNET. In 2005, PoWER delivered six educational modules in an on-line learning format for the first time and started developing three additional modules. More details concerning the on-line courses can be found in Annex 2.

PoWER also developed a joint research programme, focusing on the themes 'Water supply and sanitation', 'Water quality and pollution control' and 'Water resources management'. By the end of 2005, the programme supported seven joint research projects and a number of staff exchanges. Support was extended to the Nanjing Water Science Summer Camp, in which 60 young professionals (50% from outside China) participated. The PoWER partners Hohai University, Nanjing Hydraulic Research Institute, Taiwan International Institute for Water Education and UNESCO-IHE initiated the delivery of a joint international Masters in Hydro-informatics in September 2005. IIT-Roorkee of India has expressed its interest in becoming a core partner in this programme in 2006.

UNESCO-IHE also develops and supports regional water capacity building networks in Africa, Asia, Latin America and the Middle East. In 2005, new multi-year agreements were signed with SIDA and DGIS for continued support to WaterNet (IWRM for Southern Africa), with DGIS for NBCBN-RE, the Nile Basin programme aiming at basin-level research and training in river engineering, and with NUFFIC for the newly established CK-Net, a network of ten collaborating universities in Indonesia.

In the Netherlands, the Delft Cluster network started the second phase of its research into sustainable infrastructure development in densely populated delta areas. Three of the Delft Cluster partners are likely to (partly) merge into the future Delft-based Delta Institute. Together with a number of Delft Cluster partners, UNESCO-IHE joined the Wetsus consortium in developing a proposal for the creation of a Top Technological Institute for Water. The proposal will be submitted to the Netherlands Ministry of Foreign Affairs in 2006.

A milestone was the launch of the Virtual Alumni Community (VAC) on World Water Day in April 2005. This Internet-based platform will overtime become an active marketplace where students and alumni, staff and partners will meet and interact. In September 2005, UNESCO-IHE and FION organised the seminar 'Strengthening the Role of Netherlands Alumni Associations'. Best practices and ambitions were shared, and based on the recommendations of the seminar; UNESCO-IHE developed a project proposal to enhance connectivity between alumni, their alma mater and sector organisations. An overview of the Netherlands and UNESCO-IHE alumni associations is presented in Annex 8.

MEMORANDA OF UNDERSTANDING

UNESCO-IHE has bilateral partnership agreements with more than 20 public and private organisations in support of shared interests in education, research and capacity building. The following Memoranda of Understanding (MoU) were signed in 2005:

Delft University of Technology (DUT)

signed: February 2005

goals: Formalisation of the arrangements for zero-nominations of UNESCO-IHE Professors at DUT and joint PhD-research, cooperation in education, research and capacity building, including guest-lecturing and student exchange.

Yunnan University

signed: April 2005

goals: Joint development of project proposals for China and the Mekong region, in particular in the field of river basin management and ecosystem management, and exchange of research staff.

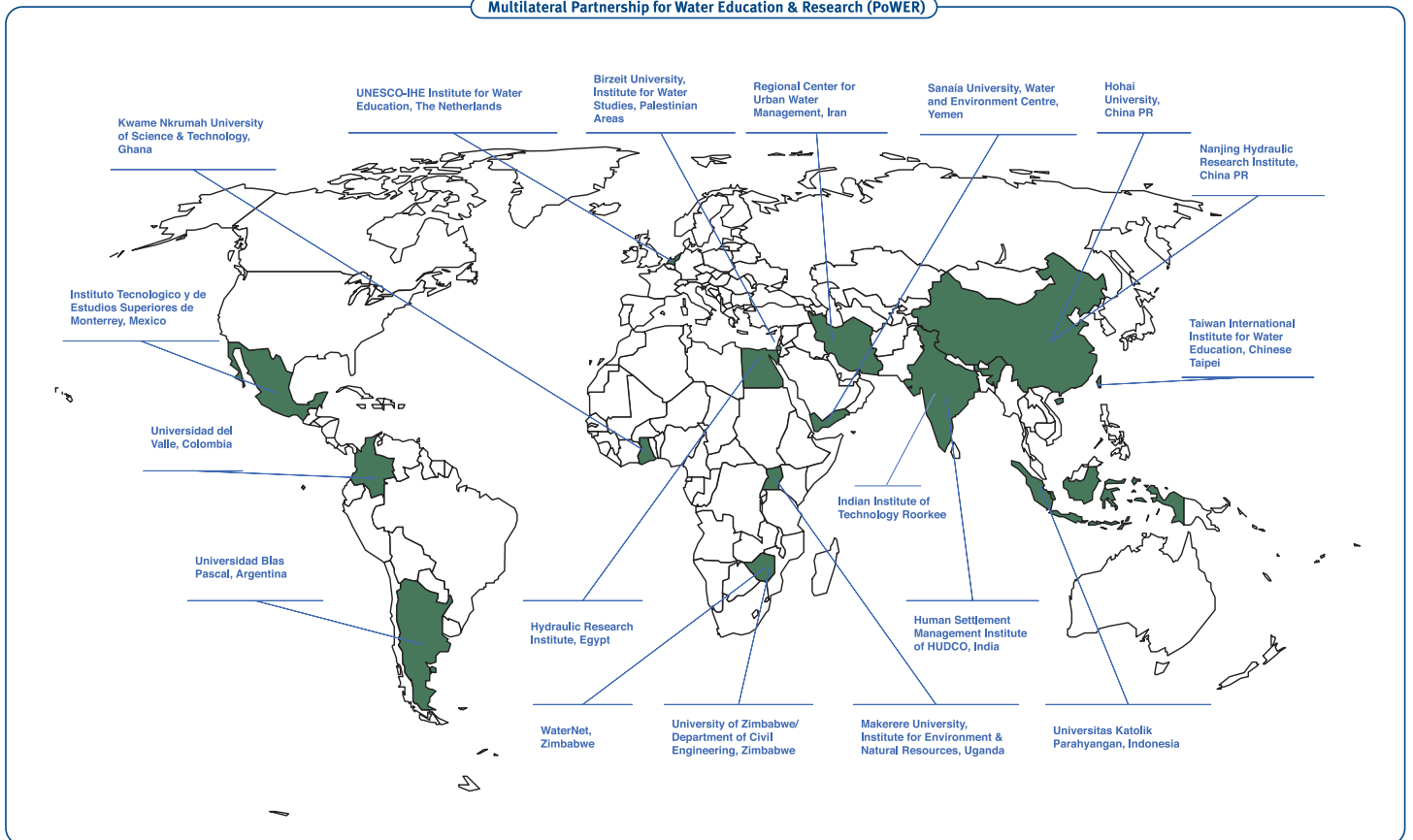
Netherlands Environmental Assessment Agency

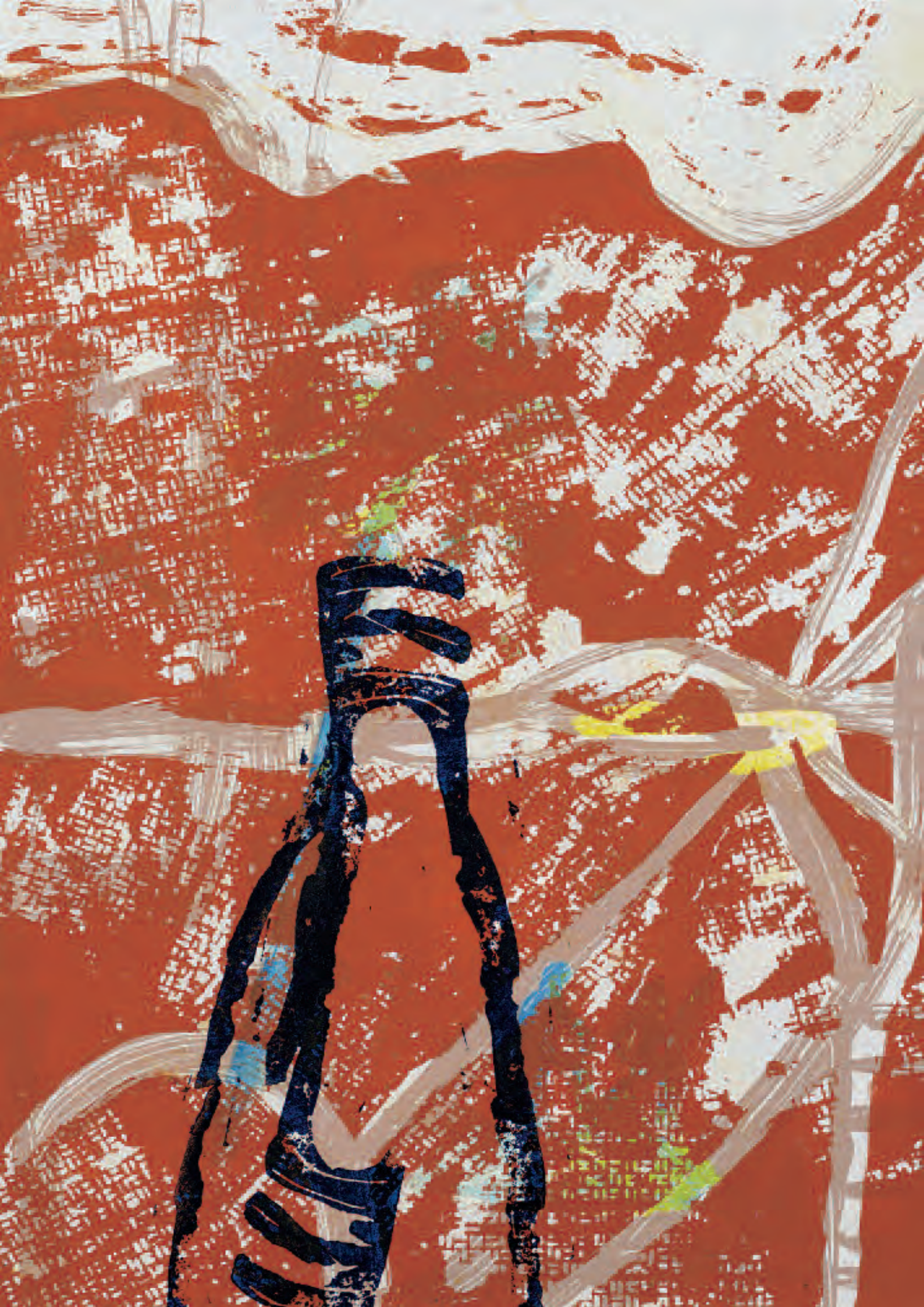
signed: October 2005

goals: Collaboration in the field of Water and Global Sustainability with a focus on Climate Change, and incorporation of Climate Change knowledge in UNESCO-IHE's education programmes.



Multilateral Partnership for Water Education & Research (PoWER)





THEMATIC DEVELOPMENTS



WATER SECURITY



Water Security deals with the development and management of a sustainable balance between water availability and water demand. It involves protection against water related hazards (floods and droughts), wise use of water resources and the safeguarding of water functions and services. The world water agenda has translated these key issues to balancing increasing human requirements for adequate water supplies and improved health and sanitation with food production, transportation, energy, and environmental needs. Major developments in this field involving UNESCO-IHE are in integrated river basin management, conflict management and in the mainstreaming of climate variability issues in integrated water resources management.

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In 2005, two of the specialisations within the Master Programme Water Science and Engineering were merged; 'Surface Water Hydrology' and 'Groundwater Hydrology' were combined into a new specialisation called 'Hydrology and Water Resources'. Two PhD theses were finalised and successfully defended. In April Mr. Preecha Wandee from Thailand presented his dissertation 'Optimization of Water Management in Polder Areas: Some Examples for the Temperate Humid and the Humid Tropical Zone'. In November Mr. Eyasu Yazew Hagos received his PhD for his dissertation on 'Development and Management of Irrigated Lands in Tigray, Ethiopia'.

UNESCO-IHE has continued support to the Exact project with the aim to jointly monitor and manage scarce water resources in the countries of the Jordan Basin in the Middle East. The Institute is participating in activities related to ground water monitoring and recharge, wastewater treatment and development of a decision support system for water re-use. In collaboration with the Ministry of Water Resources of Iraq and with the support of the Governments of the United States and the Netherlands, and the United Nations, UNESCO-IHE is providing training and education to MSc participants from Iraq. This cooperation will be continued in 2006, when an international conference on the restructuring of the water and energy sector of Iraq is also planned.

Funds have been acquired for continued support to the Nile Basin Capacity Building Network for River Engineering (NBCBN) for the coming years. This NBCBN project is making important contributions to research and capacity building for integrated water resources management in ten countries in the Nile Basin. UNESCO-IHE is increasingly providing support to trans-boundary water and environment projects in post conflict areas and potential conflict areas. Examples are the Sava Basin in the Balkan Region and the Aral Sea in Central Asia. The objective of these projects is to develop capacity for conflict management, international water laws and protocols and development of concepts and tools for integrated planning and decision-making between countries and regions.

During 2005 the initiatives related to water and climate have led to the formation of a special task force which will develop a special research and education program and start organising short courses in 2006. The task force involves UNESCO-IHE, RIVM, RWS-RIKZ and the Cooperative Program on Water and Climate (CPWC).

ENVIRONMENTAL INTEGRITY

The theme of Environmental Integrity addresses the balance between human development and quality of the environment. Central issues of concern are the efficient, equitable and sustainable allocation and use of natural resources, pollution prevention and control and wise use of aquatic ecosystems. In 2005, the fields of professional expertise covered under this theme increased substantially by appointing three new staff members and by hosting four research visitors from India, China and the Netherlands.



The Master Programme in Environmental Science offers four specialisations: Environmental Science and Technology, Environmental Planning and Management, Limnology and Wetland Ecosystems and Water Quality Management. MSc research under the Programme ranged from purely technical subjects to more policy and management oriented topics. Other educational activities in 2005 included four refresher courses for UNESCO-IHE alumni in Kenya, China and Tanzania and on-line courses on 'Integrated River Basin Management', 'Cleaner Production and The Water Cycle', and 'Wetland Management'. Julia Rosa Caicedo Bejarano (Colombia) received her PhD degree successfully defending her thesis 'Effect of Operational Variables on Nitrogen Transformations in Duckweed Stabilization Ponds'.

In collaboration with UNEP/GPA two workshops on 'Municipal Wastewater Management' were organised at international conferences. A CD-ROM on technology selection was produced and one course was delivered for the Pacific region in Fiji. A proposal for delivering up to 60 courses over three years in the APC countries was accepted by the EC and awaits GEF co-funding. The EC-INCO funded Ecotools project was concluded with a workshop and the publication of a book; another book and a special issue of Wetland Ecology and Management on the scientific output of this project are in preparation. The East Africa based EC-INCO funded Finger Ponds project was extended until mid-2006.

The research project 'Water and Ecosystems in the Upper Mekong' was completed in 2005. Research activities in this region will continue through the new Delft Cluster project 'Mekong Case: Developing Economically Sound and Environmental friendly Standards for the Planning and Design of Man-made Structures in the Mekong Floodplains'. This project is being carried out in collaboration with the Mekong River Commission and World Wildlife Fund. Under the UNESCO Young Professional Fund, greenhouse gas emission from eutrophied systems like wastewater treatment plants was researched. Publications are in preparation and a PhD project has been developed as follow-up.

Under the EC 6th Framework Programme the pre-proposal Sustainable Water Management Improves Tomorrow's Cities Health (SWITCH) was developed into a full proposal, which was accepted by the EC. Much of the research within the Environmental Integrity theme will be related to SWITCH in the coming five years.

The NPT project 'Establishment of an MSc Programme in Water Resources and Environmental Management at the National University of Rwanda' effectively started with the appointment of a resident project manager. A new NPT proposal for capacity building in Guatemala was developed together with Universidad del Valle (Cali, Colombia) and accepted by Nuffic.

URBANISATION

The rapid pace of urbanisation exerts enormous pressure on the local environment and on available resources. This generates a high demand on infrastructure services such as water supply and sanitation. Both technical and social approaches are needed in infrastructure services provision and management of human settlements. Under the theme of Urbanisation, UNESCO-IHE aims to address these issues.



The Master Programme in Municipal Water and Infrastructure offers three specialisations: Water Supply Engineering, Sanitary Engineering and Integrated Urban Engineering. Under the PoWER programme, the 'Water Transport and Distribution' on-line course has been delivered for the first time. Several short courses and refresher courses were organised, dealing with membrane technology (Delft and Oman), groundwater and advanced treatment (Taiwan - PR China), water quality control in water supply (Delft), solid waste management (Delft and Kenya) and wastewater reuse (Eritrea). A number of tailor-made courses were carried out in Delft for staff of utilities and ministries in Indonesia, South Korea, and Eritrea. Several trainings and workshops were organised on specific topics such as desalination and renewable energy in Yemen, wastewater reuse in Algeria and membrane fouling in Bahrain.

The Institute reinforced its presence in water and sanitation projects in Africa. The capacity building programme for sustainable development of water resources and environmental sanitation in Ghana and the sub-region has been officially launched. UNESCO-IHE implements this project together with KNUST, IRC and Delft University of Technology. The UN-Habitat programme 'Managing Water for African Cities' was completed in 2005, helping to build capacity in six cities in the field of water demand management and pollution control. The UN-Habitat/UNEP Sustainable Cities Programme continued, strengthening environmental planning and management through demonstration projects on sustainable urban mobility.

The Institute continued its research and development activities in the field of arsenic removal, which were combined with implementation of projects in Hungary, Serbia and Bangladesh. Unlike the family filter, which UNESCO-IHE has decided not to patent, a patent request protects the arsenic removal technology being developed for central systems.

As a response on the Tsunami disaster, professional input was provided for the development and implementation of an integral water and sanitation programme in Sumatra. On St Maarten an independent evaluation for the integrated sewage and drinking water system has been carried out. In the framework of the EXACT project, UNESCO-IHE designed a demonstration drinking water treatment plant for the sub-urban area of Amman. The plan has been put in operation in April 2005. In the WATER-TOOL research project from the 6th EC-Framework Programme an innovative tool for multi-element analysis of ground and surface water has been developed.

WATER MANAGEMENT AND GOVERNANCE

The thematic thrust of Water Management and Governance covers the linkages between the biophysical, social-institutional, and cognitive dimensions of water resources. In line with the implementation of the Millennium Development Goals, substantial emphasis is on the global imperative of good governance, since water crises are often crises of governance requiring increased allocation efficiency and the involvement of the private sector in water services provision, which in turn necessitates innovative institutional and regulatory arrangements.

The Master Programme in Water Management offers three specialisations: Water Resources Management, Water Services Management, and Water Quality Management. Other educational activities in 2005 included several regular short courses, and the launch of the on-line courses 'Public and Private Partnerships in the Water Sector' and 'Water and Environmental Law and Policy'.

Nineteen PhD candidates are addressing various aspects of the theme Water Management and Governance. Two PhD theses were finalised and successfully defended in 2005. Mr. Bekithemba Gumbo from Zimbabwe was awarded a PhD with distinction for his thesis entitled 'Short-cutting the Phosphorus Cycle in Urban Ecosystems'. Mr. Yasir Abbas Mohamed from Sudan was awarded a PhD with distinction for his thesis 'The Nile Hydro-climatology: Impact of the Sudd Wetland'.

The cores Water Resource Management and Water Services Management produced a research strategy for the next 5 years. In this strategy the integration of research in terms of PhD and MSc subjects is clearly described and an approach was developed encompassing new interdisciplinary knowledge fields, learning approaches, processes of partnership development and other modalities of innovation. Project themes have been established around the new interdisciplinary knowledge fields of 'Climate Change and Water Management' and 'Conflict Prevention and Dispute Resolution'.

A key development in 2005 was the approval of the second phase of the WaterNet programme in Zimbabwe, a network of 39 knowledge institutions and professional organisations from eleven countries in the sub-Saharan region. Financial contributions were secured from SIDA (€2.7 million) and the Dutch Government (€2.5 secured and another €2.5 million in prospect). This fosters continuity in the WaterNet programme for another 5 years. The main deliverables are a joint Master programme in Integrated Water Management, a yearly water conference and collaborative research.



In the Euromarket research project, a total of nine institutes from seven European countries analysed water liberalisation scenarios: an empirical research of the evolution of the European water supply and sanitation sectors. Six scenarios are developed and recommendations are formulated for policy development on liberalisation of the water services within the EU.

In the multi-donor funded 'Smallholder System Innovations in Integrated Watershed Management' project, five institutes from different countries work on integrated research projects. The project has the objective of studying the hydrological, environmental and socio-economic impacts of up-scaling water system innovations in rain fed agriculture in drought prone tropical and subtropical agro-systems in Tanzania (Pangani basin) and South Africa (Thukela basin).

Furthermore several smaller research and advisory missions have been completed in support of knowledge development for the theme of Water Management and Governance. Notable assignments were the DGIS funded 'Public Private Partnership Dialogue' aiming to develop and initiate a process to generate more private capital for essential investments in the water sector in developing countries. For the European Union Water Initiative the drinking water supply component and the IWRM component were supported. Both activities comprised advisory services to DGIS as drinking-water chair and to various actors within the initiative for IWRM application, such as trans-boundary river basin management.

INFORMATION AND COMMUNICATION SYSTEMS

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, data monitoring and acquisition, computer-based modelling, and knowledge-based systems for integrated water resources management.

In 2005, the Hydro-informatics specialisation was offered in the Water Science and Engineering Master programme. Together with partners from Europe and China, UNESCO-IHE started a comparable International Master Programme on Hydro-informatics. In September, five students from China completed their first semester at Hohai University in Nanjing. Subsequently they came to Delft for the second semester. A web-based video link was established to facilitate communication between the two institutes. The students in China followed all opening lectures held at UNESCO-IHE during the first week of the academic year. A lecture of Prof Hong-Yan Lee of Taiwan International Institute for Water Education was held in Nanjing for all UNESCO-IHE students via video-conferencing.

In September 2005 Mr. Biswa Bhattacharya from India, defended his doctoral thesis 'Machine Learning and Data-mining Approaches to Modelling Water and Geotechnical Problems'. He demonstrated the power of this concept by exploring such diverse systems as regional water management, sedimentation modelling and the interpretation of cone penetration tests used in geo-technics.



In 2005, several projects focused on the application of ICT in water management. The Hydroplan EC project developed a tool for asset management, which can be used for optimisation of the structural and hydraulic performance of a piped network using multi-criteria approaches. The 'Water Message Game' project aims to develop good strategies for water allocation, through a web-based simulation game. By playing the game the players learn what the best water allocation strategy might be for each of them individually, and for all of them collectively. The game is in its testing phase and will soon be accessible via the UNESCO-IHE website.

In the framework of the Delft Cluster Research Programme UNESCO-IHE is involved in several projects. The project 'Morphodynamics of North Sea and Coast and Coastal defences' aims at development of hydrologic models based on computational intelligence techniques and complementing existing models developed by RIZA and Delft Hydraulics. The 'Safety against Flooding' project aims at complementing sedimentation and silt transport modelling based on the use of Delft 3D modelling system. Within the context of a 4-year research project on Natural Hazards, UNESCO-IHE started to develop methods for enhancing operational management to limit the negative effects of floods and droughts. Weather forecasts and water system control models are used to optimise the available storage capacity at the beginning of extreme events. Decision support systems and decision protocols will be designed for application in time-pressured and high-risk circumstances. In 2005 research activities focused on the information content of global weather forecast models for control of regional water systems.

As part of its core activities UNESCO-IHE empowers its partner organisations through several regional, ICT supported partnerships. The first knowledge network was WaterNet, a collaborative network of universities in Southern Africa established for joint development of a curriculum in Integrated Water Resources Management. Another example is the Nile Basin Network (NBCBN-RE), in which ICT supports the collaboration of several thematic research groups across the ten countries in the Nile basin. Their collaborative work is facilitated through a web-based knowledge platform. In June 2005 the CKNet-INA knowledge network in Indonesia was officially established, in which UNESCO-IHE facilitates the collaboration of ten leading universities in the field of water, infrastructure and environmental management. The ultimate goal is that they make use of each other's strengths in delivering new products and services for the water sector.





**ORGANISATIONAL DEVELOPMENTS
FINANCIAL REPORT
FELLOWSHIP TRUST FUND**

ORGANISATIONAL DEVELOPMENTS

PERSONNEL AND ORGANISATION

On 31 December 2005, a total of 166 people were employed by UNESCO-IHE of which 92 were academic and 74 supporting staff, compared to a total of 148 at the end of 2004. The policy was to increase capacity in the academic departments, in order to give more attention to research and education. A remarkable number of five new professors were appointed.

In 2005, a Quality Assurance Manager was appointed responsible assuring quality of the Institute's educational, research and project activities. The Core group Capacity Building was transferred from the Management and Institutions department to the Hydro-informatics and Knowledge Management department. A number of policy papers have been written and several outdated arrangements were renewed. The most important ones were the 'Appointment Procedure', 'Child Care Policy', 'Regulations for Short Missions Abroad', 'Flexible Working Hours' and 'First Aid and In-House Emergency Response'.

The Value-added Rewarding System was fully evaluated in 2004. This system aims to develop staff competencies and rewards performance based on predefined criteria. In 2005 the improvements and adaptations have been implemented. Meetings and presentations were organised to explain the system and to show task setting forms with criteria related to the competency level. The name of the system has been changed into Staff Development and Appraisal System and the whole system has been made more user-friendly.

ICT DEVELOPMENTS

UNESCO-IHE supported the further development, and implementation of the Taiwanese Learning Management System for application in on-line learning. Six on-line courses were launched.

For the videoconferencing facility, communication via broadband IP has been explored as alternative for communication via ISDN. The conclusion is that it is a viable option for the future, but at the moment is too dependent on the availability of bandwidth in remote locations to suit our needs. The equipment for management and distribution of video material was updated.

An external consultant explored the possibilities for improvement of the back-up system. This is needed due to more digital archiving and the fire hazard involved with the storage of back-ups and servers in the same building. The final report on the survey is expected early 2006.

The centralised customer relations database and made accessible through Internet for staff members on mission abroad. Through a new software application, a link has been established between the time-writing and project management system, enabling staff to access the financial details of the projects. Flat TFT-screens were placed in some offices; in two years time all staff members will have such a screen.



STUDENT AND EDUCATIONAL AFFAIRS

The introduction of the 18-month MSc programme in October 2005 necessitated an update of SALSA, the participant registration and education management software. Another implication was the large fluctuation in the need of student accommodations. In order to optimise the availability of accommodations, negotiations were started with the housing agency to renew the contract.

On World Water Day 2005 the Virtual Alumni Community (VAC) was launched. This web-based-IHE platform can be accessed by all UNESCO-IHE alumni, participants and staff and enables them to create their own personalised UNESCO-IHE related information system and communities.

Throughout the year, social evenings with international themes were organised, where participants performed and introduced their culture to fellow participants, staff and friends. Social excursions this year included trips to the Keukenhof, Belgium and Paris. In March, participants actively participated in the International Education Sports Day. Ten universities and institutes competed for the challenge cup, and the overall victory was for the UNESCO-IHE team.





FACILITY MANAGEMENT

In 2005, the reconstruction and renewal of the Institute's catering facilities was completed. This included a new layout for both the kitchen and serving area. In the reproduction centre, a new black/white copier was introduced, and a colour copier was leased as a pilot. This pilot proved so successful, that plans have been developed to upgrade this facility permitting in-house printing of full colour materials like PhD dissertations and brochures.

The Partners for Water programme secretariat is hosted by the Netherlands Water Partnership (NWP), the in-house partner of UNESCO-IHE. In order to accommodate all staff, external office space has been hired and a plan has been developed for the re-location of the departments. A decision was made to modernise the furnishings of the building. Four architects presented their views on how UNESCO-IHE can create a stimulating environment in both office and meeting areas. One design was selected and will be implemented in the first half of 2006.

COMMUNICATION AND MARKETING

Marketing focused primarily on the promotion of the Master Programmes and the new on-line courses. The website played a vital role in marketing and communication, and the number of visitors to the site increased again by 20%. In order to facilitate the mailing of hard-copy brochures, all corporate contacts were transferred to a centralised customer relations database. Among others, this resulted in a repetition of last year's record of 1400 applications for the Master Programmes and delivered a satisfactory 83 participants in the first run of the on-line courses. The Institute was represented at international education fairs in Syria, Vietnam and Indonesia.

A new strategy to increase exposure of UNESCO-IHE and its Fellowship Trust Fund through cultural events triggered the establishment of the PACT Cultural Committee. In October a first Water Concert was organised attracting over 300 people, a mix of politicians, academics and business relations. Several renowned artists volunteered to become Cultural Ambassador of the Institute. Belgian choreographer Jan Fabre was particularly successful in conveying his 'water message' at the premiere of his History of Tears programme in different countries in Europe and Asia.

In preparation of the Fourth World Water Forum in Mexico in March 2006, UNESCO-IHE and its partners IRC, Cap-Net, CPWC and Streams of Knowledge took up the coordination of the theme Capacity Development and Social Learning. A baseline document was prepared and submitted to feed the debates at the Forum. Two topical sessions proposed by UNESCO-IHE were accepted: one on New Capacity Building Concepts and Tools, the other on Development of Local Capacities for Sustainable Irrigation and Drainage. The Forum also hosted the launch of the second UN-World Water Development Report, a document for which UNESCO-IHE prepared the chapter on Capacity Building.

Media-exposure increased as a consequence of a more pro-active approach. Issues which received much press coverage included the development by UNESCO-IHE of a low-cost family filter for the removal of arsenic from drinking water, and hurricane Katrina which hit the south of the United States and created interest for the Institute's expertise.

PACT

UNESCO-IHE operations in 2005 showed an increase in both income and expenditures compared with 2004, as the total turnover was over €23 million. The overall result is a surplus of €20,000. In 2004 there was a €606,000 deficiency, which was mainly caused by extraordinary costs (accelerated depreciation on ICT assets and the settlement of a lease agreement issue).

INCOME

The income of the Institute consists of three major sources: the subsidy of the Ministry of Education, 'tuition fee' and 'projects'.

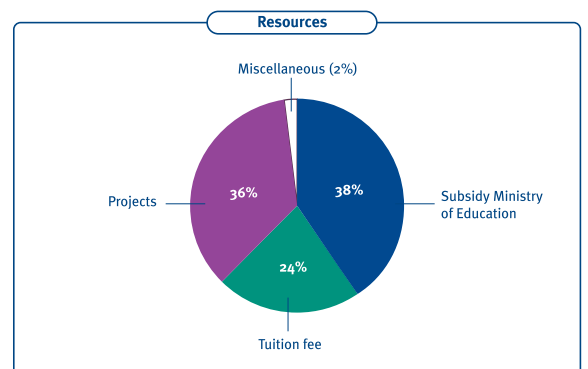
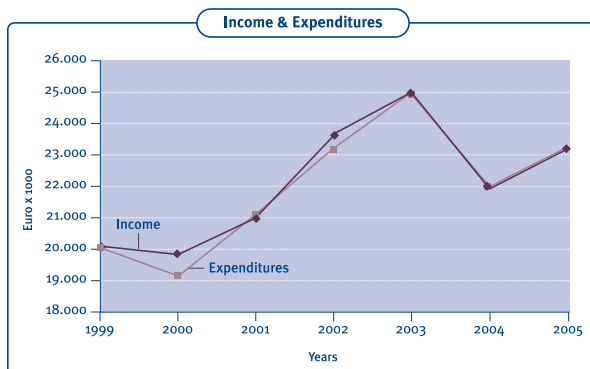
The subsidy from the Ministry of Education was increased at a rate below inflation as Dutch government applied an efficiency cut to all higher education institutes. The tuition fee income increased by 57% as a result of a significantly higher number of participants in degree programmes and in short courses.

The substantial decrease in project income is largely compensated by lower expenditures under the same heading (cashier function of UNESCO-IHE). The net project income in projects is 19 % lower than in 2004, due to the termination of the SAIL project programme and fewer sponsored activities in the framework of the PoWER Partnership. Research projects generated more income as Delft Cluster Phase II took off.

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. Non-programme expenditures have increased as a consequence of higher staff and management costs and education related costs.

The staff and management costs were influenced by the regular salary increase of 0.55%, in line with the general trend at Dutch universities, and more particularly by the increase of the number of staff from 128 fte in 2004 to 145 in 2005. Education related costs doubled in 2005. 75% of this increase is the result of an accounting correction in 2004. The remaining difference is caused by the absorption of fellowship costs for two MSc students whose sponsors withdrew last minute, and five NFP MSc students for whom no research sponsoring was obtained. Extra-ordinary costs were made for the accreditation of the MSc programmes. The costs of buildings decreased, as a dispute concerning the lease contract was settled in 2004. Lower costs of facilities were achieved because accelerated depreciation of ICT assets took place in 2004. Acquisition and Marketing costs went up due to a reservation for the 50th anniversary of the Institute in 2007. General costs were much lower than in 2004 as a consequence of a considerable decrease of the reservation for uncollectible debts and less devaluation of the US Dollar. The latter resulted in much lower costs for currency revaluations. Through improved treasury management, income from interest went up.



BALANCE SHEET

The balance sheet shows a proportion of 14/86 between equity and borrowed capital (solvency 14%). This is lower than in 2004 (16%) due to the sponsoring of five MSc fellowships from the Fellowship Trust Fund. The borrowed capital includes the provision and the current liabilities. In the current liabilities reservations were made for leave hours, holiday bonuses and the costs of one lease term. The provisions are for building maintenance and redecoration. The current ratio is 1.18 (2004: 1.20), which means that on the short term the Institute is creditworthy. For the long term sustainability of the Institute our policy will be to increase the financial reserves.

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

	2005	2004
Income		
Subsidy Ministry of Education	8,581	8,541
Tuition Fee	8,534	5,182
Projects	5,827	7,906
Others	444	565
Total income	23,386	22,194
Programme expenditures		
Tuition Fee (stipends, guest lecture, etc.)	5,679	3,625
Projects	3,813	5,404
Total programme expenditures	9,492	9,029
Non-programme expenditures		
Staff and Management	9,175	8,510
Buildings	2,185	2,349
Facilities	1,023	1,325
Education related costs	1,251	645
Acquisition and Marketing	216	171
General Costs	189	405
Interest	-165	-126
Total non-programme expenditures	13,874	13,279
Operating result	20	-114
Extraordinary charges	0	492
Overall result	20	-606

BALANCE SHEET (amounts in €000s)

	31 DECEMBER 2005	31 DECEMBER 2004
Assets		
Fixed assets	1,513	1,443
Accounts receivable	4,194	3,242
Cash and banks	7,803	7,998
Total	13,510	12,683
Equity and liabilities		
Equity	1,478	1,480
Fellowship Trust Fund	454	492
Provision	1,418	1,361
Current liabilities	10,160	9,350
Total	13,510	12,683

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.

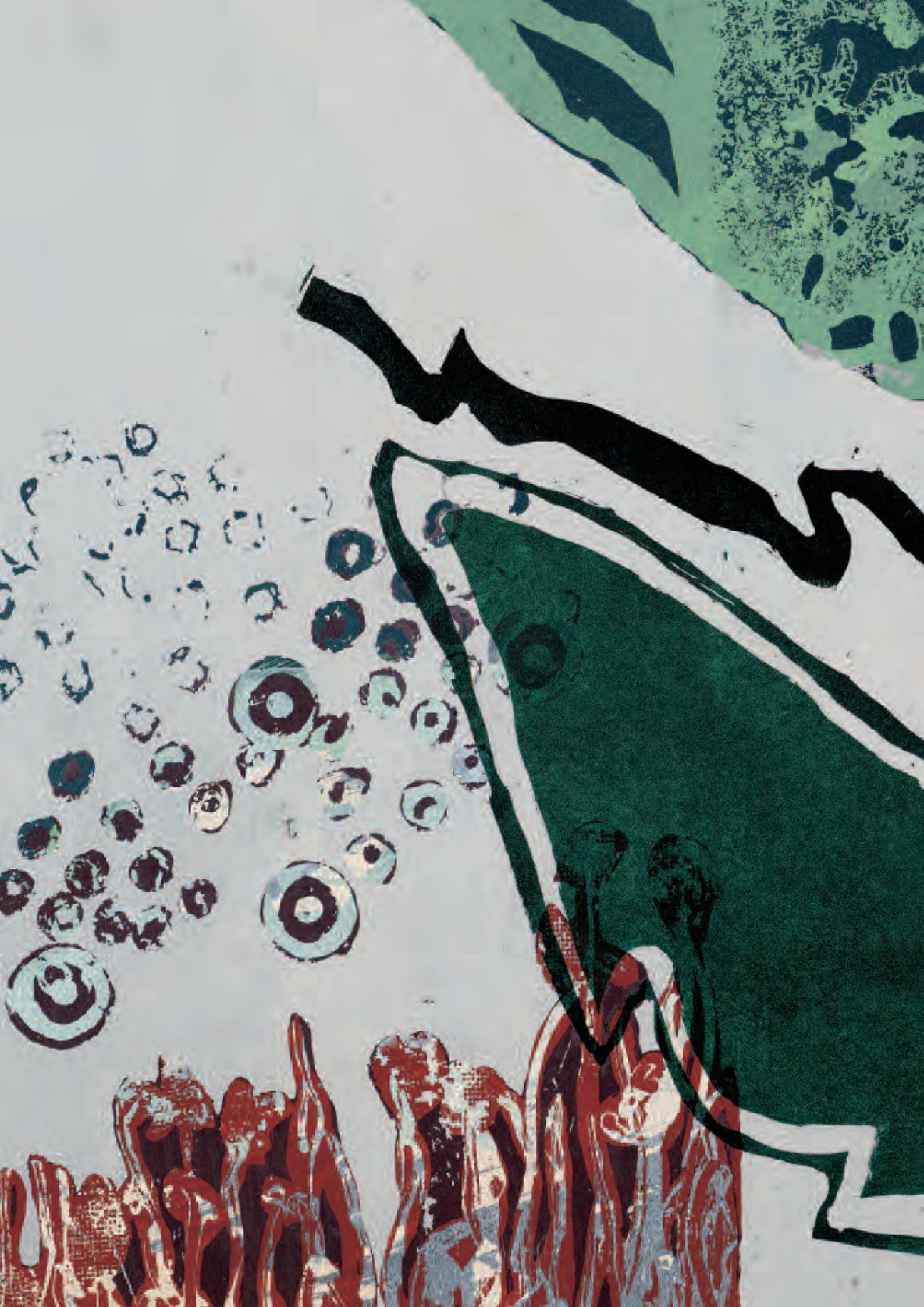
In 2005, the FTF provided financial support to five students: three from China, one from Bangladesh and one from Uganda. More details about the students are presented in the Financial Statement. The Chinese participants benefited from an earmarked donation from the Honour Power Foundation. They started their studies at the Institute in 2004, and are expected to receive their MSc degree in 2006.

In October 2005, a Water Concert was organised to create exposure for the FTF. Over 300 people attended the concert, and several companies, organisations and individuals contributed in excess of € 5,000. The PACT Cultural Committee was established to build a pact between Culture and Science. A number of artists were appointed Cultural Ambassadors of UNESCO-IHE to call for good water management and advocate the urgent need for well-trained water managers throughout the world. The Cultural Ambassadors are listed in Annex 7. The organisation of a Round Table Conference at UNESCO Headquarters in Paris started in 2005. This event will be held in 2006 and will bring the FTF under the attention of Member State Governments.

Nabiul Islam (40) is a Civil Engineer. Before joining the Masters Programme, he worked as a Roads and Drainage Engineer in Bangladesh. From rural areas he moved to Dhaka, the capital. After his studies, he will join the Urban Development Unit in the local Government of Dhaka. He also intends to set up an NGO to improve the infrastructure in Dhaka slums. "At UNESCO-IHE I learnt what an integrated approach to urban development is, how to design projects, make a financial planning, and develop scenarios for optimisation. I have been exposed to experiences from many developing countries. This knowledge equips me for doing better things for my country."

FINANCIAL STATEMENT FELLOWSHIP TRUST FUND (amounts in €)

Fund on 1 January 2005	492,071
Gifts	
Water concert / sale of books	5,151
Wetusus	2,400
AON Consulting	1,500
EBRD	1,014
Delta Lloyd	1,000
Unie van Waterschappen	600
Aveha Technische Dienst	450
Other gifts	570
Interest	9,009
Total	21,694
Fellowships	
Md Nabiul Islam, Bangladesh	12,260
Hannington Ochieng, Uganda	12,260
Huang Liqun, China	12,084
Li Hong, China	11,573
Wang Dan, China	11,408
Total	59,585
Fund on 31 December 2005	454,180



The image is a full-page abstract illustration. It features a dark, winding path or river that starts from the top left and curves towards the bottom right. The background is a mix of dark blue, black, and light grey tones, suggesting a night sky or a textured surface. In the lower right, there is a group of stylized figures, possibly people, rendered in shades of red, orange, and white. The overall style is graphic and expressive, with bold lines and a limited color palette.

ANNEXES

REGISTERED PARTICIPANTS FOR THE ACADEMIC YEAR 2005-2006											
	SOURCE OF FUNDING			REGION OF ORIGIN					GENDER		TOTAL
	Full NFP	Co-financed NFP	Other	Africa	Asia	Latin America	Middle East	Other	Female	Male	
MSc programmes (taught part)	8	70	115	79	70	14	20	10	48	145	193
- Water Science and Engineering	3	20	67	28	38	5	14	5	22	68	90
- Water Management	1	10	18	10	10	3	3	3	6	23	29
- Environmental Science	2	24	19	19	17	4	3	2	14	31	45
- Municipal Water and Infrastructure	2	16	11	22	5	2	0	0	6	23	29
MSc programmes (thesis part)	0	1	134	47	60	14	11	3	35	100	135
- Water Science and Engineering	0	0	59	11	33	8	7	0	12	47	23
- Water Management	0	0	20	10	7	0	2	1	9	11	20
- Environmental Science	0	1	22	8	11	1	1	2	8	15	23
- Municipal Water and Infrastructure	0	0	33	18	9	5	1	0	6	27	33
PhD programmes	10	2	46	23	18	7	3	7	18	40	58
Total	18	73	295	149	148	35	34	20	101	285	386
Percentage	4.7	18.9	76.4	38.6	38.3	9.1	8.8	5.2	26.2	73.8	

REGULAR SHORT COURSES		
THEME	COURSE	DATE
Water Security	Applied Groundwater Modelling	26/04/05-13/05/05
	Groundwater Exploration and Monitoring	08/03/05-25/03/05
	Integrated Coastal Zone Management	11/04/05-21/04/05
	International Seminar on Port Management	05/04/05-29/04/05
	Public Private Partnerships	18/05/05-03/06/05
	Real-time Control of Water Systems	07/03/05-25/03/05
	Wetlands for Water Quality	14/02/05-04/03/05
Environmental Integrity	Aquatic Ecosystems: Processes and Applications	26/04/05-13/05/05
	Cleaner Production and the Water Cycle	05/04/05-22/04/05
	Ecology of Lakes: Functional Processes and Implications of Conservation and Management	25/04/05-03/06/05
	Environmental Engineering	14/02/05-04/03/05
	Environmental Monitoring and Modelling	07/03/05-24/03/05
	Environmental Planning	07/03/05-24/03/05
	Environmental Policy Making	14/02/05-04/03/05
	Environmental Systems Analysis	24/01/05-11/02/05
	Fishpond Management and Fish Parasitology	28/06/05-17/07/05
	Integrated River Basin Management	14/02/05-04/03/05
	Managing Organisations and Change	26/04/05-13/05/05
	Service Oriented Management of Irrigation Systems	08/03/05-24/03/05
	Urban Network Infrastructure Construction and Maintenance	05/04/05-22/04/05
	Water and Environmental Law and Institutions	17/05/05-05/06/05
	Water Transport and Distribution I	26/04/05-13/05/05
	Water Transport and Distribution II	18/05/05-03/06/05
Water Treatment Processes and Plants	05/04/05-22/04/05	
Urbanisation	Decentralised Water Supply and Sanitation	17/05/05-03/06/05
	Dissolved Air Flotation in Drinking Water Treatment	26/09/05-07/10/05
	Groundwater Resources and Treatment	14/02/05-07/03/05
	Membrane Technology in Drinking and Industrial Water Treatment: Principles, Design and Application	25/09/05-29/09/05
	Remediation and Handling of Contaminated Sediments	04/09/05-08/09/05
	Seminar on Dredging and Reclamation	28/02/05-04/03/05
	Solid Waste Management and Engineering	17/05/05-03/06/05
	Urban Water Systems Modelling	17/05/05-03/06/05
	Water Quality Control in Water Supply	05/09/05-16/09/05
	Water Quality Monitoring and Bio-indicators	08/08/05-26/08/05
	Water Resources Planning	08/02/05-04/03/05
Wetland and River Floodplain Ecology	18/07/05-07/08/05	
Water Management and Governance	Financial Management of Utilities	05/04/05-22/04/05
	Knowledge Management for Decision Makers in the Water Sector	18/04/05-29/04/05
	Modelling of Activated Sludge Wastewater Treatment	05/04/05-15/04/05
	Operations and Maintenance of Urban Structure	18/05/05-31/06/05
	Sustainable Wastewater Treatment and Reuse	25/04/05-13/05/05
	Water Quality Assessment	24/01/05-11/02/05
Information and Communication Systems	Data-driven and Hybrid Modelling in the Framework of Hydro-informatics	21/02/05-01/04/05
	Operations Management	08/03/05-25/03/05
	Surface Water Treatment : Conventional and Advanced Technology	07/03/05-28/03/05
	Watershed and River Basin Management	05/04/05-22/04/05

ONLINE COURSES

COURSE	DATE
Wetland Management	01/09/05-21/12/05
Water Transport and Distribution	13/09/05-24/02/06
Flood Modelling for Management	16/03/05-22/07/05
Cleaner Production and The Water Cycle	10/10/05-31/01/06
Integrated Coastal Zone Management	07/03/05-03/06/05
Integrated River Basin Management	01/03/05-03/07/05 01/09/05-31/12/05

REGIONAL REFRESHER COURSES

COUNTRY	COURSE	DATE
China	Ecological Sanitation Concepts and the Reuse of Nutrients and Water	22/09/05-27/09/05
China	Integrated River Basin Management and the Environment – Exploring Capacity Building and Institutional Development Needs	25/10/05-30/10/05
Kenya	Solid Waste Management and Engineering	16/10/05-22/10/05
Kenya	Coping with Climate Changes in Water and Environmental Management	31/10/05-05/11/05
Tanzania	The Assessment and Management of Environmental Water Allocations for Rivers	21/11/05-26/11/05

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, All tailor made courses of 2005 are listed in Annex 4 - Projects.

PROMOTIONS IN 2005				
NAME	PROMOTION DATE	COUNTRY	PROMOTOR	TITLE THESIS
Ms. Julia Rosa Caicedo	March 23, 2005	Colombia	Gijzen	<i>Effect of Operational Variables on Nitrogen Transformations in Duckweed Stabilization Ponds</i>
Mr. Preecha Wandee	April 29, 2005	Thailand	Schultz	<i>Optimization of Water Management in Polder Areas: Some Examples for the Temperate Humid and the Humid Tropical Zone</i>
Mr. Bekithemba Gumbo	June 17, 2005	Zimbabwe	Savenije	<i>Short-cutting the Phosphorus Cycle in Urban Ecosystems</i>
Mr. Yasir Abbas Mohamed	June 30, 2005	Sudan	Savenije	<i>The Nile Hydroclimatology: Impact of the Sudd Wetland</i>
Mr. Bisnawath Bhattacharya	September 9, 2005	India	Price	<i>Machine Learning and Data-mining Approaches to Modelling Water and Geotechnical Problems</i>
Mr. Eyasu Yazew Hagos	November 2, 2005	Ethiopia	Schultz	<i>Development and Management of Irrigated Lands in Tigray, Ethiopia</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. 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>
Mrs. Awuah	Ghana	Gijzen	<i>Pathogen removal mechanisms in macrophyte and algal based wastewater stabilisation ponds</i>
Ms. Azab	Egypt	Price	<i>Integration of GIS, remote sensing and modeling for water quality management in an irrigated watershed</i>
Mr. Azza	Uganda	Denny	<i>Nearshore retention of sediment and nutrients in Lake Victoria</i>
Mr. Babu	Uganda	Gijzen	<i>Improving nitrogen removal in algae wastewater stabilisation ponds</i>
Mr. Barretto Cordereo	Venezuela	Price	<i>under construction</i>
Mr. Bessa	Brazil	Petry	<i>Coupled modelling and monitoring for water quality assessment in large reservoirs - Brazilian cases</i>
Ms. Bremere	Latvia	Schippers	<i>Saving energy and water by maximising the conversion of membrane filtration system</i>
Mr. Buamah	Ghana	Schippers	<i>Adsorptive removal of arsenic, iron and manganese from groundwater</i>
Mr. Chapagain	Nepal	Savenije	<i>Globalisation of water</i>
Mr. Corzo Perez	Colombia	Price	<i>under construction</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>under construction</i>
Ms. Essandoh	Ghana	Amy	<i>Soil aquifer treatment of wastewater: a framework for technology implementation in a developing country</i>
Mr. Gupta, RaKesh	India	Petry	<i>Analysis and control of flows in pressurised hydraulic networks</i>
Mr. Gupta, Ramesh	India	Savenije	<i>Decision support for conflict resolution in Indian river basins</i>
Mr. Haile	Eritrea	Schultz	<i>A tradition in transition; spate irrigation in Eritrea</i>
Mr. Jiang	China	Amy / v. Rollegem	<i>Modelling of membrane bioreactor systems</i>
Mr. Jung	Korea	Price	<i>A model based decision support system for managing eutrophication in a reservoir</i>
Ms. Kaggwa	Uganda	Denny	<i>Organic manure and artificial substrate use in fingerponds in East Africa; processes & implications</i>
Ms. Kayoza	Tanzania	Akinyemi (temp.)	<i>Integrated infrastructure for sustainable improvement of right-of-way safety in dynamic urban environments</i>
Mr. Kipkemboi	Kenya	Denny	<i>Utilisation of wetlands through integration of fingerponds into riparian farming systems in East Africa</i>
Mr. Kuntiyawichai	Thailand	Schultz/Uhlenbrook	<i>under construction</i>
Mr. Lai Ko An	China	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 investigating water resources management in arid coastal regions</i>
Ms. Li Hong	China	Mynett	<i>Spatio-temporal analysis and simulation of population dynamics in lakes and estuaries</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	<i>under construction</i>
Mrs. Lugwisha	Tanzania	Leentvaar	<i>Wastewater management institutional performance and change</i>
Mr. Makurira	Zimbabwe	Savenije	<i>Smallholder water system innovations for upgrading rainfed agriculture in arid and semi-arid areas</i>
Mr. Melesse	Ethiopia	Savenije	<i>Conservation tillage systems using improved implements for small holder farmers in semi-arid regions of Ethiopia</i>
Mr. Morales	Mexico	Uhlenbrook	<i>Characterisation of mega- and macro scale heterogeneity of porous media</i>
Ms. Mul	Netherlands	Savenije	<i>Balancing water for crop production and ecosystems at subcatchment and catchment scale</i>
Ms. Nacorda	Philippines	vVierssen	<i>Effects of burrowing invertebrates on sediment and seagrass dynamics along a siltation gradient</i>
Ms. Nazer	Palestine	Gijzen	<i>From water scarcity to sustainable water use in the West Bank, Palestine</i>
Mr. Ngigi	Kenya	Savenije	<i>Hydrological impacts of up-scaling rainwater harvesting on Ewaso Ng'iro river basin water resources management</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. Nyagwambo	Zimbabwe	Savenije	<i>Groundwater recharge processes and groundwater management in tropical crystalline basement aquifers</i>
Mr. Nyarko	Ghana	van Dijk	<i>Ghana water and sanitation sector: drivers and performance</i>
Mr. Oduro-Kwarteng	Ghana	Amy	<i>Anaerobic digestion of municipal solid waste: batch technology assessment and transfer to a devolving country</i>
Mr. Owusu-Ansah	Ghana	vd Zaag	<i>under construction</i>
Mr. Paudel	Nepal	Schultz	<i>An improved approach for the design and management of irrigation canals</i>
Mr. Sekomo	Rwanda	Gijzen	<i>under construction</i>
Mr. Shrestha	Nepal	Price	<i>Computational intelligence and uncertainty modelling in flood forecasting</i>
Mr. Sonko	Uganda	Denny	<i>Fish production in secondary municipal wastewater fed ponds in Uganda</i>
Ms. Thampanya	Thailand	Denny	<i>Impacts of sedimentation on mangrove dynamics along Thai coastlines</i>
Ms. Tu	China	Uhlenbrook	<i>Assessment of the effects of changes in climate land-use on the hydrology of the Meuse river basin</i>
Mr. Urrutia	Colombia	Schultz	<i>Sustainable management after irrigation system transfer</i>
Mr. Valencia	Mexico	Gijzen	<i>The sustainable use of bioreactor landfill techniques in the Netherlands</i>
Mr. Yangali Quintanilla	Peru	Amy	<i>under construction</i>
Ms. Zagonjoli	Albania	Mynett	<i>Uncertainty analysis and risk management in dam break modelling</i>

* 'under construction' = PhD proposal not yet passed the Academic Board

ANNEX 4 | PROJECTS

CAPACITY BUILDING						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
China	Training Courses on River Basin Water Resources Management	RNE/MoWR	WE	DUT	Oct-04	May-06
	Real-time Monitoring & Management System for Water Resources in the Yellow River Basin	ORET/MILIEV	WE	EARS (lead), MLR, YRWCC, HOFUNG	Jan-04	Dec-07
	Capacity Building of a China Groundwater Information Center	ORET/MILIEV	WE	TNO (lead), China Min. Natural Resources	Jul-03	Jun-08
Ghana	Capacity Building for Sustainable Development of Water Resources and Environmental Sanitation in Ghana and the Sub-Region	NUFFIC/NPT	MUI	DCE, Kwame Nkrumah University, IRC, TU Delft	Nov-04	Oct-08
Indonesia	Fundamentals of Private Participation in Public Infrastructure development and management	Min of Econ Affairs, Indonesia	MAI	PT-IHE Indonesia	Nov-05	Dec-05
	Building Academic Cooperation and Developing Training Modules in Infrastructure, Water and Environment Management	NUFFIC/NFP-TP	HIKM	PT-IHE Indonesia	Sep-04	Sep-05
Iraq	Long Term Training Iraqi Ministry Employees	USACE	Other		Oct-04	May-06
Mexico	Environmental Flows Training Course on the Rio Conchos, Mexico	WWF	ER	WWF local agencies	Jul-05	Aug-05
Netherlands	Coastal Practice Network	EC/INTERREG IIIC	WE	EUCC (lead)	Dec-03	Jan-07
Palestine	Capacity Building in the Environmental Sector at Birzeit University	EC/TEMPUS	MUI	BZU, Sweden	Sep-04	Sep-06
Rwanda	Rwanda NUR MSc Programme in Water Resources and Environmental Management	NUFFIC/NPT	MAI	ITC, KNUST	Oct-04	Oct-08
Vietnam	Institutional Strengthening of Training Capacity of the Dept. of Hydrology and Dept. of Environment at Hanoi and Ho Chi Minh Hydro-Meteorological Colleges	NUFFIC/NPT	WE	Saxion (lead), ITC, CF	Jan-04	Dec-06
	Upgrading of Training Capacity in Coastal Engineering at the Hanoi Water Resources University	RNE	WE	DUT, CICAT (lead), WL	Sep-00	Apr-05
	Upgrading the Training Capacity in Coastal Engineering of the Hanoi Water Resources University, Phase 2	RNE	WE	DUT, CICAT (lead), WL	Oct-05	Sep-09
Zimbabwe	WaterNet Strategy-Phase II: 2005-2009	SIDA, DGIS	MAI	University of Zimbabwe + various SADC partners	Apr-05	Dec-08
Various Countries	Low Cost Urban Mobility Demonstration Programme	UNCHS/DGIS	MUI	KUTIP, IHS	Jul-03	Apr-06
	Knowledge Networks for the Nile Basin	DGIS/DCO	HIKM	HRI, ITC ea	Jul-05	Jul-09
	Water programme for Africa (WPA) - Phase 1	UNESCO(IHP), Italia	MUI	VU/Acacia	Jun-04	Jun-06
	Water Data Banks - Phase 4, Middle East Region: Israel, Jordan, palestine Authority	EC/EuropeAid	WE	DHV (lead), DHI Water & Environment, Engicon, DHVMED, Palistinian Hydrology Group	Oct-04	Jun-08
	Cap-Net: International Network for Capacity Building in Integrated Water Resources Management	DGIS	Other	Various partners world wide	Aug-01	Dec-05
	PoWER - Partnership for Water Education and Research	DGIS	Other	Initial Network of 16 Knowledge Institutes	Jan-02	Dec-06
	Small Scale Water Treatment Facilities for Domestic Use and Artificial Recharge with Surface Water - Middle East	DGIS	WE	Water Commission/Mekorot Water Company (Israel); Min. of Water and Irrigation (Jordan); Palestinian Water Authority	Apr-02	Mrt-07
	Full establishment of the Nile Basin Capacity Building Network for River Engineering	WB-NBI	HIKM	HRI	Jan-04	Jun-05
	Latin American-European Partnership for Water Education and Training	EC/ALFA II A	ER	Univalle, BR, NI, MX, GT, EC, PE, GB, FR, IT	Jun-04	Jun-06
	Water for African Cities Programme: Training and Capacity Building Component	UNCHS/DGIS	MUI	CEFOC/NETWAS	Jul-02	Aug-05

ADVISORY SERVICES						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
Bangladesh	Review Mission Small Scale Water Resources Sector Programme	NL Embassy	MAI		Nov-05	Dec-05
Croatia	Production of Live and Smoked Eels in Croatia	Senter/PSO	MUI	Gebr. Kraan	Jul-04	Dec-07
Egypt	Workshop in support of the Advisory Panel Project on Water Management, Egypt	APP Central Office	MAI	APP	Jan-05	May-05
Ghana	EUWI WG WS Capacity Building	IRC	MAI		Jun-05	Oct-05
Hungary	Assessment Water Treatment Equipment	VITUKI	MUI	Vituki	Dec-05	Dec-05
Indonesia	Consultancy for Tearfund NL Watsan Programme in Aceh	Tearfund Netherlands	MUI		Mar-05	Mar-05
Kazakhstan	Integrated Water Resources Management for Wetlands Restoration in the Aral Sea Basin (Nothern Part)	NATO	WE	SIC ICWC	Oct-04	Oct-06
Netherlands	Thematic Overview Paper on "Arsenic Removal"	IRC	MUI		Jan-04	Jun-05
	Working Group on Sharing International Experiences in Coastal Zone Management	MinV&W	ER		Oct-05	Mar-06
	Simulation of Dynamic Performance of a Biotreater	Shell Global Solutions	MUI		Sep-05	Aug-06
	Technologies for wastewater management in the Pacific	UNEP/GPA	ER		Jul-05	Oct-05
Netherlands Antilles	Independent Assessment of Sewerage System Bids St. Maarten	NL-Gov.	MUI		Feb-03	Jul-05
	Water management and sanitation Bonaire II	EC	ER	Dorsch Consult	May-05	Jun-05
Pakistan	Review of Three Studies on Water Escapages below Kotri Barrage under the International Panel of Experts	WB	WE		Mar-05	Oct-05
Russia	Assessment of the GDLN Centre at the World Bank Moscow Office	World Bank	Other		Jun-05	Jun-05
Tanzania	Study on the Role of Dar es Salaam in the Tanzanian Economy	WB	MAI		Jan-05	Jun-06
Various Countries	Pilot River Basin Plan for Sava River (Croatia, Bosnia and Herzegovina, Serbia and Montenegro)	EC/EuropeAid	WE	SAFEGE (Belgium, lead), Univ. of Belgrade	Nov-04	Oct-07
	WSS-CC Institutional & Management Options Working Group, 2001-2003	DGIS	MAI		Aug-02	Aug-05
	Modes of Engagement with Public Sector Water Supply & Sanitation Services in Developing Countries	WB-BNWP	MAI	Various local consultants	Dec-02	Feb-05
	Review of the ADB Cooperation Fund for the Water Sector	ADB	MAI	Riza (through WATC)	Dec-05	Feb-06
	Handing over the Wetland Professionals Platform for more Sustainability	V&W/RIZA	ER		May-05	Oct-05

EDUCATION AND TRAINING						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
China	Refresher Seminar on Ecological Sanitation Concepts and the Reuse of Nutrients and Water	Nuffic	ER	CAAE, NHRI, Hohai University, World Toilet Org.	Jan-05	Dec-05
	Refresher Seminar on Integrated River Basin Management and the environment	Nuffic	ER	Beijing University, ACCA21	Jan-05	Dec-05
	Development and Demonstration of Feasible Technologies for Small Cities; Environmental Infrastructure in China's Western	FTEI, China	MUI		Nov-05	Nov-05
	Group Training for Professionals from the Yellow River Conservancy Commission 2004-2005	YRCC	WE	Yellow River Conservancy Commission	Oct-04	Sep-05
	Training Course on River Basin Water Resource Planning	MWR -China	WE	Dept of International Cooperation, MWR China	Oct-04	Sep-05
	Special Training Programme for Young Professionals of the Yellow River Conservancy Commission	Dept of Int. Cooperation, China	WE		Oct-05	May-07
Ethiopia	Conservation Tillage Systems Using Improved Implements for Small-Scale Dryland Farmers in Ethiopia	NWO/WOTRO	MAI		Jul-02	Jun-06
Fiji	Municipal Wastewater Management Pacific	UNEP/GPA	ER		Oct-05	Nov-05
France	International Flood Initiative Programme	ICHARM or IHP France	HIKM	IHP, ICHARM	Dec-05	Mar-06
Hungary	Professional Training of Civil Servants Working for the Regional Authorities Belonging to the MoEW	EC-EuropeAid-Phare	WE	Grontmij, Ecorys, REC, BUTE	Dec-04	Oct-05
Indonesia	Tailor Made Course on Masterplanning in Drinking Water Supply	Gemeente A'dam, waterleidingbedrijf	MUI		Jul-05	Aug-05
Iraq	Short Course Knowledge Management for Decision Makers from Iraq	UNESCO-Iraq	HIKM		Jun-05	Oct-05
Kenya	Refresher Course Coping with Climate	Nuffic	WE	ITC	Jan-05	Dec-05
	Refresher Course in Solid Waste Management and Engineering	Nuffic	WE	NETWAS	Jan-05	Dec-05
Republic of Korea	KOWACO V Group Training Waste Water Treatment	KOWACO	MUI		Sep-05	Nov-05
	KOWACO VI Group Training Hydroinformatics	KOWACO	HIKM		Sep-05	Nov-05
Netherlands	Short Courses on Water Quality Control in Water Supply	participants	MUI		Aug-05	Sep-05
	Short Course on Dissolved Air Flotation in Drinking Water Treatment	participants	MUI		Sep-05	Oct-05
	Flood Management Educational Platform	UNESCO/IHP	HIKM		Dec-05	Mar-06

EDUCATION AND TRAINING						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
Netherlands	Short Course "Membrane Technology in Drinking & Industrial Water Treatment"	participants	MUI		Sep-05	Sep-05
	Short Course - Remediation and Handling of Contaminated Sediments	participants	WE		Aug-05	Sep-05
Oman	Short Course "Fouling and Scaling of RO Membrane Systems" for professionals in Oman	MEDRC Oman	MUI		Mar-05	Mar-05
	Short Course "Membrane Technology in Drinking & Industrial Water Treatment"	MEDRC	MUI		Sep-05	Sep-05
Rwanda	Refresher Course Rwanda on Geo-informatics for Hydrological modelling	Nuffic	WE	ITC	Jan-05	Dec-05
Tanzania	Refresher Seminar on Environmental Flows for Rivers	Nuffic	ER	University of Dar es Salaam, WaterNet, GLOWS	Jan-05	Dec-05
Various Countries	Training Course on Sustainable Wastewater Management in Coastal Cities' in Kenya, Mauritius and USA	UNEP-GPA	ER		Jan-05	Apr-05
	Tailor-Made Short Course on Brackish Groundwater Use for Drinking Water Production in the Middle East	NL Gov/PfW	MUI	Vitens BV	Apr-04	Feb-05
	WaterMill: Water Sector Capacity Building in Support of the Millenium Development Goals	DGIS	MAI		Oct-04	Mar-08
	Strengthening the Role of Netherlands Alumni Associations	DGIS/DCO, NUFFIC	OD	NUFFIC, FION	May-05	Oct-05
	CoastLearn: Development of Trans-national Networks	EC/LEONARDO	WE	EUCC (lead), RIKZ, Southhamptom	Oct-02	Oct-05

POLICY DEVELOPMENT						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
China	Special Session on Capacity Building for Integrated Water Resources Management at the Yellow River Forum in China	RNE	WE	MoWR	Oct-05	Nov-05
Ghana	Africa-EU Strategic Partnership on Water Affairs	IRC	MAI		May-05	Jul-05
Netherlands	Framework Project: Delft Cluster Phase II	BSIK	HIKM	DC partners	Jan-05	Dec-09
Various Countries	Co-operative Programme on Water and Climate (CPWC) Phase II	PfW	Other	WUR	Jan-05	Dec-05
	Development of a Model Dialogue in support of implementing Water Projects with Private Financing	DGIS	MAI	NWP, IRC, Cap-Net, Dialogue of Water & Climate	Jul-04	Jun-05
	Contribution to UNESCO's World Water Development Report 2 (WWDR-II) by production of chapter 13: "Ensuring the knowledge base"	UNESCO	HIKM		May-04	Jun-05
	Development of a baseline document on Capacity Building and Social Learning and coordination of this theme for the 4th World Water Forum, Mexico	Secretariat of the 4th World Water Forum	HIKM	IRC, CapNet, CPWC, Streams of Knowledge	Oct-05	Mar-06
	Flood Management Simulation Game WWF4	Min V&W	WE	Delft Hydraulics	Nov-05	Mar-06

RESEARCH AND DEVELOPMENT						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
Botswana	Water and Ecosystem Resources in Regional Development - Okavango Delta	EC/RTD	MAI	Linkoping University (lead), ORC, DRFN, Sussex	Jan-02	Jan-05
China	Integrated Lancangjiang (Upper Mekong) River Basin Management for Soil and Conservation and Ecosystem Protection (ao in Luozha watershed)	PfW/NL-Gov	ER	WUR, ITC, State Forestry Adm., Kunming Province	Jun-03	May-05
Denmark	Wave run-up and overtopping of sea dikes with and without Stilling Wave Basin under 3D wave attack	DHI-Denmark with EU support	WE	DHI (DK), Braunschweig University (D), Ghent University (B)	Sep-05	Dec-07
Hungary	Feasibility Study on Arsenic Removal in Mako Tersegi Vizikozmo in Mako, Hungary	SENER/PESP	MUI	SELOR, Vitens and MTV (Hu)	Feb-04	Jun-05
Indonesia	Land & Water Management Tidal Lowlands, South Sumatra Province	DGIS	WE	Rijkswaterstaat	Mar-04	Jun-06
Mozambique	Environmental Profile of the Incomati Estuary and Adjacent Coastal Zone	UNEP-GPA	MAI	RIKZ	Feb-05	Jul-05
Netherlands	Surface Water Hydrology	ICES	WE	Delft Cluster (WL=lead), RIZA	Oct-00	Mar-05
	Peak Flow Reduction with Retention and Detention Measures	RIZA	WE	Min V&W	Sep-05	Sep-06
	Delft Cluster: Development of Modelling Tools in Support of the Implementation of the EU Water Framework Directive	BSIK/DC	HIKM	Delft Cluster Partners	Sep-05	Aug-08

RESEARCH AND DEVELOPMENT						
COUNTRY	TITLE	FUNDING	DEPT	PARTNERS	START	END
Netherlands	Intensive Programme in the Erasmus Framework	EC/Erasmus	HIKM	Université de Nice	Jan-03	Jan-07
	Delft Cluster phase II: Removal of Micropollutants from Drinking Water	Delft Cluster	MUI	Delft Cluster Partners	Jan-04	Dec-07
	Hydraulic Impacts of System Behaviour during Design Flow Circumstances in Dutch Rhine Branches	RIZA	WE	Delft Hydraulics	Sep-05	Sep-06
	Delft Cluster phase II: Water Quality in Distribution Systems	Delft Cluster	MUI	Delft Cluster Partners	Jan-04	Dec-07
	An Innovative Tool for Multi-element Analysis of Ground and Surface Water	EC/CRAFT	MUI	TerraMentor, SELOR	Jan-04	Dec-05
	Delft Cluster Phase II: Safety against Flooding	Delft Cluster	HIKM	Delft Cluster Partners	Jan-05	Dec-08
	Living with Water - interviews	Dura Vermeer	MUI		Apr-05	Jun-05
	Collaborative Energy Platform	IRF	MUI		Apr-05	Mar-05
Philippines	Management of Water Scarcity	IRF	WE		May-05	Apr-06
	Biodiversity Research Programme: Mindanao	SEARCA	ER	BRP SEAMEO, SEARCA	Apr-04	Jan-05
Various Countries	Tools for Wetland Ecosystem Resources Management in Eastern Africa	EC/INCO-DEV	ER	Univ. Siena (It)(lead), KIPPRA, Trinity, Makarere	Nov-01	Apr-05
	The Dynamics and Evaluation of Finger Ponds in East African Freshwater Wetland Ecotones	EC/DGXII/INCO	ER	MUIENR, UDSM, Kings College, ENKI, Egerton	Jun-01	Jun-06
	Demonstration of an European Knowledge Management Framework for a Procedure on Waste- and Drinking Water Asset Management	EC/FP5	HIKM	AQUAFIN (lead)	Jul-04	Feb-06
	Water Liberalisation Scenarios: An empirical Analysis of the Evolution of the European Water Supply and Sanitation Sectors	EC/FP6	MAI	Ecologic, EPFL, ENGREF, TUD Univ Birmingham, Univ Bocconi, Univ Leuven, Univ Paris, Univ Zaragoza	Jan-03	Dec-05
	Smallholder System Innovations in Integrated Watershed Management	WOTRO/SIDA/DGIS	MAI	IWMI, University of Sokoine, University of Kwa Zulu Natal, Stockholm University	Jul-02	Jul-06
	Water Reclamation Technologies for Safe Artificial Groundwater Recharge	EC/FP6	MUI	16 total; Lead is Rheinisch Westfälische Technische Hochschule Aachen	Jun-05	Dec-08
	Water Scarcity and Food Security in Tropical Rainfed Water Scarcity Systems	NL Govt/CA	MAI	IWMI, IIASA, NBSS&LUP, CRID, NCAP, CIMMYT, ICARDA,	Jun-03	mei-05
	Research Project: Mixing Parameters and Salt Water Intrusion	IRF	WE		Jan-05	Dec-05
	Challenge of Integrated Water Resources Management for Improved Rural Livelihoods (Limpopo)	CP/CGIAR	MAI	WaterNet	Jan-04	Dec-08
	Delft Cluster Phase II: Morfodynamice of North Sea and Coast and Coastal Defences	BSIK	HIKM	Delft Cluster Partners	Jun-05	May-07
	Dynamic Least Cost Optimisation of Wastewater Systems Remedial Works Requirements	IRF	HIKM		Oct-04	Nov-05
	Co-ordinated Action on Ocean Energy	EC/FP6/P6/CA	WE	Ramboll	Nov-04	Dec-06
	Integrated Flood Risk Analyses and Management Methodologies	EC/FP6/SUSTDEV	HIKM	HR Wallingford Ltd. (lead), WL	Mar-04	Dec-08

WE Department of Water Engineering
ER Department of Environmental Resources
MUI Department of Municipal Infrastructure
MAI Department of Management and Institutions
HIKM Department of Hydroinformatics and Knowledge Management

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

LIST OF RESEARCH THEMES		
DEPARTMENT	CORE	RESEARCH TOPIC
Environmental Resources	Pollution Prevention and Control	Cleaner production and the water cycle Eco-technologies
	Freshwater Ecosystems	Planning for integrated river basin management Wetland management Environmental water allocation
Management & Institutions	Water Resources Management	Bio-physical processes of the hydrological system Institutional dimensions of water management Integrative properties of water management
	Water Services Management	Institutional options for water and sanitation The establishment and functioning of river basin organizations Institutional, economic and financial aspects of the water cycle Organizational change in the water sector Strategic management of drinking water utilities The equity and participation issues in water services management
Municipal Infrastructure	Sustainable Urban Infrastructure	Urban water networks Water distribution systems Urban drainage Wastewater collection systems Urban flood resilience
	Urban Water Supply & Sanitation	Improving/enhancing conventional drinking water and wastewater treatment Natural drinking water and wastewater treatment systems Advanced drinking water and wastewater treatment
Water Engineering	Hydraulic Engineering & River Basin Development	Hydraulic structures and hydraulic processes Environmental impacts of water related projects Management of floods and droughts
	Coastal Engineering & Port Development	Integrated coastal modelling Performance and reliability of flood defence systems and coastal structures Integrated coastal zone management Ports and inland waterways
	Land & Water Development	Hydraulic structures and hydraulic systems Environmental impacts of hydraulic works Institutional aspects of system management Integrated lowland development
	Hydrology and Water Resources	Hydrology and climate Physical and biogeochemical processes of groundwater systems
Hydroinformatics & Knowledge Management	Hydroinformatics	Modelling paradigms, uncertainty and risk Systems engineering and optimisation Collaborative decision making and Internet-based computing and learning
	Capacity Building	Learning processes Institutional systems analysis ICT and networks that facilitate access to knowledge

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Curiosity and desire for the unknown, these journeys have different forms with an exploration of a certain geographical theme. Nicole van den Biggelaar is fascinated by maps. Nameless surfaces and symbols, sometimes her maps are very recognisable and colourful, sometimes fragmented, abstract and black-and-white. Her work actually revolves around one central theme: a soaring, joyful, all-encompassing curiosity of the concealed and submerged. Nicole makes the world bigger than it was before; she opens your eyes.

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