



Rijkswaterstaat
*Ministry of Transport, Public Works
and Water Management*

UNESCO-IHE
Institute for Water Education



COOPERATION BETWEEN DELTA COUNTRIES

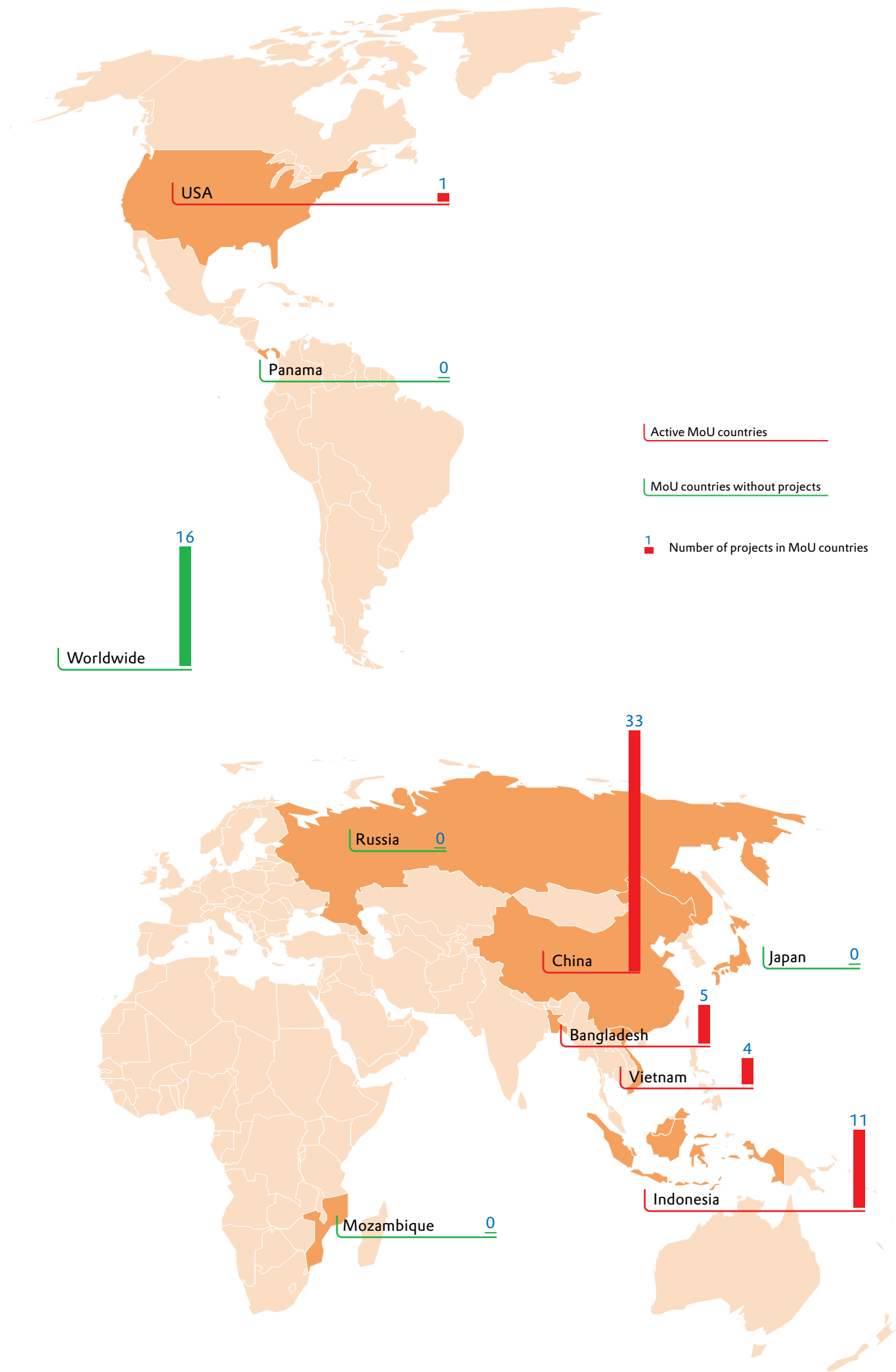


COOPERATION BETWEEN THE UNESCO-IHE INSTITUTE FOR WATER EDUCATION AND THE DUTCH MINISTRY OF TRANSPORT, PUBLIC WORKS AND WATER MANAGEMENT

The UNESCO-IHE Institute for Water Education (UNESCO-IHE) and the Dutch Ministry of Transport, Public Works and Water Management (V&W) signed a Memorandum of Understanding (MoU) in 2006. Under this agreement UNESCO-IHE runs an educational programme for the specific countries that the ministry has a strategic relationship with, and covers scholarships for MSc and PhD students, tailor-made courses for senior government officials, and the financing of specific small projects.

The Ministry of Transport, Public Works and Water Management maintains international relations to enable the exchange of information, knowledge and experience on water management in deltas. China, USA, Vietnam, Panama, Russia, Bangladesh, Mozambique, Indonesia and Japan are all delta-countries with similar challenges, and thus the countries on which the cooperation agreement focuses.

The cooperation between V&W and UNESCO-IHE is unique. V&W profits from UNESCO-IHE's experience in teaching courses to people with different cultural backgrounds. UNESCO-IHE alumni are part of a vast network of professionals that understand and have experience with the Dutch delta situation. They later become sparring partners so that water management in the Netherlands profits from the experience, creativity and diversity of government professionals over the world.



PHD RESEARCH ON NORTH CHINA AND THE YELLOW RIVER

The Yellow River Conservancy Commission (YRCC), UNESCO-IHE and V&W have a long history of cooperation, and a joint PhD research programme on issues of interest to both the YRCC and V&W was launched under the cooperation agreement. The generated knowledge should benefit both countries and the research is based on experiences in China and the Netherlands. Currently the MoU supports three PhD studies through this program, of which one is entitled 'Parameterisation of surface and subsurface runoff hydrological processes in land surface models with emphasis on north China and the Yellow River basin.'

The Yellow River is the second largest river basin in China, but accounts for only 2% of the total river runoff of the whole nation, supporting 12% of the population and the development of 15% of arable lands. As such, it plays an important role in the national economic development. Following the rapid social and economic development, water resources shortage problems gradually become more serious. Therefore, more water information is needed to reach the requirements of integrated water resources management and sustainable development of the Yellow River basin.

Land surface models (LSMs) provide an approach to understand and quantify the complex interactions between land surface systems and overlying atmospheric systems. Some processes in land surface hydrology models are not yet fully investigated and are a challenging area in LSM research. The principal aim of this study is to improve the representation of surface and subsurface hydrological runoff processes in land surface parameterisation schemes.

The expected results of the study are the appropriate descriptions of the feedback between soil water and groundwater, the sub-grid representation of local infiltration and surface saturation characteristics and the description of land-river water exchange process including the runoff generation at sub-grid scales, and an assessment of the potential and applicability of the methodologies in an extended LSM-A modelling framework for the Yellow River basin in the north of China. Such a framework can be used to improve the capacity of the water resources management in support of the basin sustainable development.

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MSC RESEARCH ON CLIMATE CHANGE IMPACT ON MANGROVES

There is consensus about climate change and its effects on different environmental systems, particularly coastal areas. Being at the interface of sea and land, mangroves are especially vulnerable to climate change. Mangrove ecosystems offer a.o. protection against floods and act as nurseries for commercially attractive fish and shrimp species. Rising sea levels are considered to be the major threat to mangroves, although other climate-driven factors including rainfall and temperature also play a role.

In this research project, a simple hydrodynamic model coupled with a plant demographic model was constructed for exploring ecological mechanisms and functional dynamics in mangrove forest ecosystems. The model showed the effects of climate-driven factors on the early stages of the life cycle of mangroves, including the seasonal variation of seedling mortality. A set of climate scenarios was applied to models for Bangladesh and Kenya. The tree density was increased under different climate scenarios in both places. By supporting this initiative V&W facilitates Dutch knowledge transfer to its partner Delta country Bangladesh and the research contributes to global and local adaptation to climate change.

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MSC STUDENTS FINANCED BY V&W AND THE YANGTZE AND YELLOW RIVER COMMISSIONS

Both the Yangtze River Commission and the Yellow River Commission have employed quite a large number of UNESCO-IHE alumni over the years. Based on their experiences with the Institute, both river commissions decided to send groups of employees to the Netherlands from 2005 to 2008. The financing of these groups was a combined effort of the river commissions and V&W. Twenty young Chinese professionals received their MSc diploma through this cooperation. V&W benefits indirectly as they have 20 well placed ambassadors spread over two highly relevant water management agencies in China.

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RESEARCH

DOUBLE DEGREE PROGRAM ON LOWLANDS WITH SRIWIJAYA UNIVERSITY, INDONESIA

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Indonesian government is directing efforts in the future development of lowlands based on an integrated approach. However, there is a substantial shortage of skilled staff to take care of the development of the required policies and approaches, the resulting plans and planning and the actual design, implementation, operation, maintenance and management of the required programs and projects.

The Indonesian government - through its National Development Planning Agency BAPPENAS - requested the Sriwijaya University in Indonesia to develop a Double Degree MSc program in Integrated Lowland Development and Management Planning jointly with UNESCO-IHE.

The Double Degree programme is meant for government staff at the ministerial, provincial and district level, in charge of or involved in activities with respect to lowland development and management. The Netherlands Education Centre in Indonesia agreed to give support to the program.

This cooperation sustainably benefits an Indonesian and a Dutch academic institution on a topic that is clearly of mutual interest. Through this cooperation a strong network of ambassadors in this field will develop gradually around the alumni of this program.

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MASTER CLASSES PAVING THE WAY TO A VIETNAMESE WATER AND CLIMATE CENTRE

Vietnam is expected

to be one of the countries most affected by the consequences of climate change, and as it is a delta country, V&W views it as a logical partner to cooperate on issues of similar interests. In the course of 2010, a series of four master classes will be organised in Vietnam, focusing on water and safety, the urban environment, adaptation and natural processes and on adaptation practices and climate services.

The series of master classes should pave the way to establish a specialised centre on water and climate change in Vietnam by targeting policy makers, policy implementation agencies and the top of the knowledge community. The local partners involved in this project are the Hanoi Water Resources University, Ho Chi Min City National University, Can To University and MONRE. This project involves several Dutch organisations such as Deltares, Royal Haskoning, NWP and CPWC and indirectly helps promote the Dutch water sector as leading in the field of adaptation to climate change.

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TRAINING ON WETLAND MANAGEMENT PLANNING FOR INDONESIA

Indonesia has a large number of unique wetlands, both coastal as well as freshwater. Some of them are protected for their unique biodiversity, such as Berbak (Sumatra), Danau Sentarum (Kalimantan) and Wasur (Irian Jaya). Other wetlands may have a less unique biodiversity, but are crucial for water management (flood control and irrigation schemes), carbon storage (peat swamps on Kalimantan), and coastal protection (coral reefs and mangroves).

Many of these wetlands are under pressure because of population growth and economic activities such as agrofuel production. This leads to loss of biodiversity and directly impact the livelihoods of many Indonesians. The Forestry, Environment, Public Works, Agriculture, and Fisheries departments of the Indonesian Government acknowledge the need for the wise use of wetlands.

UNESCO-IHE - together with partners such as Deltares, Wageningen International and Wetlands International in the Netherlands and Bogor Agricultural University and SEAMEO Biotrop in Indonesia - have developed a training program on Wetland Management Planning. This program is based on an existing UNESCO-IHE online course, and aims to train researchers, policy makers and implementers. In time, the training centre of SEAMEO Biotrop will be able to take over the training program and deliver it in Indonesia to reach those professionals that are involved in daily management of wetlands throughout the country.

This activity fits well within the four party MoU between VROM, V&W and their Indonesian counterparts. The topic links water management to food production and wise use of ecosystems.

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