



UNESCO-IHE PROCEEDINGS

Water for a Changing World

Developing Local Knowledge and Capacity

EDITORS: G.J. ALAERTS AND N.L. DICKINSON

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WATER FOR A CHANGING WORLD – DEVELOPING LOCAL KNOWLEDGE AND
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Water for a Changing World – Developing Local Knowledge and Capacity

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Foreword

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1 INTRODUCTION

There are legitimate reasons why many feel the issues related to the use and management of water have reached a critical stage. The figures are well known by now and overwhelming in their impact: indeed, the availability of water has dropped from approximately 13,000 to 6,000 cubic meter per person per year; every day we witness 6,000 children dying of water-related diseases and disasters; there are still one billion human beings out there who are not being served with clean drinking water and two billion who are lacking access to proper sanitation. While population has increased threefold during the 20th century, collective water thirst has grown six fold, a clearly unsustainable trend.

On the other hand, a positive aspect of these developments is that the crisis has become so important to so many productive sectors that water is now internationally recognized as a top priority at the highest political levels. Some say it is the single most limiting factor for investment. As a result, governments at all levels, as well as other organs of civil change, are taking any number of initiatives. Investment in “pipes and pumps” is up, but this is the “easy” part of the solution. Still required are more tangible commitments and decisions that will impact water management over the long-term. Generating and disseminating new knowledge, and building capacity at all levels, are inescapable parts of any sustainable solution, and investments in these aspects will pay dividends for years into the future. While these benefits are not as easy to measure as those from investments in physical infrastructure, they are equally vital to our being able to actually reach the Millenium Development Goals (MDGs). As the world is in a state of accelerated change, part of the challenge has been “catching up” in terms of both human and physical capacity. The knowledge and capacity to deal with these new challenges sometimes exist but they often are not in the right “place” and need to be transformed in order to be understood and applied appropriately.

2 UNESCO-IHE

Fifty years ago, in mid-1957 a seed was planted and a dream born, and when one contemplates this decision, it is easy to understand how simple and yet how visionary and

catalytic a decision it was. The 50th anniversary of UNESCO-IHE Institute for Water Education is the realization of the efforts of countless people who have contributed to make this institution what it is in service to the Member States of the United Nations Educational, Scientific and Cultural Organization. On this occasion, UNESCO-IHE is proud to have hosted the symposium “Water for a Changing World: Developing Local Knowledge and Capacity” in response to the combination of a demand for action and the need to develop new and sustainable approaches for the water sector.

UNESCO-IHE is an educational institution, with education, research and capacity building pillars supporting its relevance, particularly to developing and transition economy countries. In its 50 year history, 46 as a Dutch institute with an international focus and the last four as an integral part of UNESCO, it has awarded more than 13,500 Masters level diplomas to mid-level water professionals from 162 countries, 99% of whom return to their home countries after graduation and 85% of whom remain active in the water sector 15 years after leaving Delft. This in itself makes this institute unique. It is in a class of one in the United Nations system in terms of its being able to offer accredited MSc and PhD degrees. UNESCO-IHE graduates form an amazing list, a virtual “who’s who” of those who have influenced the development of the water sector in recent decades.

Over the years, UNESCO-IHE has continued to play a cutting-edge role in the development of water science, and particularly in the essential role of science in supporting logical policy and investment decisions to improve water management. Since becoming part of UNESCO, the intensity of this function has increased, as the institute’s involvement with the International Hydrological Programme and the World Water Assessment Programme attests. In addition, the ability of UNESCO-IHE to develop new knowledge, and better understanding of the context of its institutional application, has led not only to interaction at the international level through groups such as the World Water Council and its World Water Forum, but also to practical demonstrations of the efficacy of our theory in the real world, with tangible results measured against, for example, the MDG targets. To continue to develop this is a challenge for all of us.

Development implies progress in the quality of the human condition. In this context, there is no negative development, but rather errors or mistakes—sometimes by design, sometimes due to gaps in planning or the lack of citizen involvement, among many other causes. Our role is to augment and build on the positive, based on solid science interpreted in ways that convince and win the support of so-called beneficiary populations. We also are firmly committed to engender support for what we title the Partnership for Water Education and Research, a long-term cooperative effort that develops the education and capacity building goals of the Institute.

In this context, this collection presents an exciting series of articles that appeal to diverse interests and, with a focus on the local context, elucidate the challenges in knowledge and capacity development that face us all.

3 UNESCO

At the heart of reaching the Millennium Development Goals is the objective of improving the way water challenges are dealt with at all levels of civil society. We

all know that there are areas throughout the world where we have major capacity limitations in this regard. Therefore, the mission of UNESCO-IHE is extremely important, and in addition, the UNESCO Education for All programme has a role to play in tackling the gaps in water knowledge. When Member States recognize that water should be a cross-disciplinary development priority, they implicitly recognize that education is going to be crucially important to help secure needed investments in new infrastructure for the long-term.

In recent years UNESCO has responded to this change in the global agenda by making water a principal priority. UNESCO has reinforced its activities significantly over the past six years, based on three pillars inside, and one pillar outside, the Organization. The first is the International Hydraulic Programme (IHP), which is a global science programme. The second is UNESCO-IHE. The third is the World Water Assessment Programme (WWAP), which is a joint effort of 24 UN agencies, “UN Water”. The fourth pillar is the network of UNESCO Category II Centers: national water related institutions, think-tanks, and research facilities that align their goals and strategies with those of the UN system and particularly the IHP. There are now 10 UNESCO Category II Centers related to water. The latest, opened in Japan, is the International Center of Water Hazards and Risk Mitigation. Further development is now focused on how to forge closer links among the centers, with UNESCO-IHE, serving as the central hub. This is an example of what the UNESCO Director General referred to as a “new model” for moving an entire sector forward on the international scene, joining the UN system with other organizations in order to address issues of great importance in a consolidated manner.

While the entry of UNESCO-IHE into the United Nations system is recent, its significance will be measured by the long-term future. It is our hope and dream that the pillars of UNESCO action, including UNESCO-IHE, will together be able to assist our Member States, and particularly the developing countries, to meet the Millennium Development Goals relating to water, and other international goals such as integrated water resources management. Both now and in the future, through the application of UNESCO-IHE’s outstanding qualities and capacity, we hope to be able to go farther and faster to address complex water-related problems like floods, droughts, and the impacts of climatic changes. UNESCO-IHE will not only be a key player, but it will also act as an inspiration to others and, through its network of partner institutions, help replicate the force of knowledge institutions as a vital link in overcoming complex challenges.

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knowledge into the reality of improved institutions that positively impact the future of the water sector for all. For some countries, such as the Netherlands, water has been a critical development issue for several centuries. The recognition that water was going to be a critically important item on the global agenda is a much more recent development. We are confident in the ability of UNESCO, UNESCO-IHE, and their partners to meet the challenges of developing new knowledge, of helping build the capacity that science can generate, and of inspiring the far sightedness of decision-makers to use this information wisely.

PART 1: Background

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