PREFACE

Ambassador John W. McDonald, Chairman
The Institute for Multi-Track Diplomacy

Understanding the relevance of this book, produced by the Navigating Peace Initiative, requires relating a bit of personal history. At the first inter-governmental world conference on water at Mar del Plata, Argentina in 1977, the represented governments adopted a Plan of Action recommending a large number of national and international actions on water. In 1978, after returning to the State Department after a four-year tour with the International Labor Organization, I read the plan for the first time. Water had fascinated me since my service in the Middle East and I was familiar with water-related problems facing developing countries, especially those suffered by the rural poor.

One recommendation stood out: a call for the United Nations to designate a decade focused solely on the problems of drinking water and sanitation. I decided to make that recommendation a reality. I drafted a UN resolution designed to launch the Water Decade, and over the next 18 months, pushed it until it was adopted by four different UN bodies and, on November 10, 1980, by the entire General Assembly. By 1990, the end of the Decade, the World Health Organization reported that 1.1 billion people received safe drinking water for the first time in their lives and 769 million people gained access to sanitary facilities.

Unfortunately, these impressive figures did not prevent water from falling off government radar screens at the end of the Decade. Little happened for the next 10 years. But finally, in 2000, the UN established the Millennium Development Goals (MDGs). Goal 7 called for reducing by half the number of people in the world without safe water by 2015. At the third world conference on the environment in Johannesburg in 2002, "sanitation" was added to Goal 7.

But how would we reach these lofty goals? I began promoting a second water decade at a meeting at the Wilson Center in early 2002, and drafted a UN Resolution calling for a second UN Water Decade designed to achieve the water MDG by 2015. Finally, with the government of Tajikistan taking the lead, the resolution was adopted by the UN General Assembly in 2003, and scheduled to launch on World Water Day, March 22, 2005.

The United States has now stepped up to the plate. Thanks to the combined efforts of Congressman Earl Blumenauer and Senator Bill Frist, on December 1, 2005, President George W. Bush signed into law the Senator Paul Simon Water for the Poor Act, which directs the secretary of State to develop a detailed strategy for integrating water and sanitation programs into U.S. foreign policy. The law also calls upon the United States to fulfill its commitment to Goal 7—the first time that a MDG has been adopted as part of U.S. law. This landmark bipartisan legislation puts the United States on the front lines of the fight to bring clean water and sanitation to those without it.

But high-level political attention alone will not be enough to meet this goal. The Navigating Peace Initiative, in the series of papers gathered here, calls not only for global action at the highest levels, but also at the lowest: By reporting and evaluating small-scale opportunities to expand water and sanitation, the authors show that we will not win this fight without unglamorous but effective solutions like ceramic filters and pit latrines. All of these efforts demonstrate that the United States is taking a global—as well as a local—leadership role in addressing one of the most critical issues the world is currently facing.

INTRODUCTION: WATER STORIES

By Alicia Hope Herron and Geoffrey Dabelko

Not surprisingly, the word "water" is found in every language in the world (UNESCO, 2006).[1] But water often denotes more than the substance we drink to survive. For example, the Setswana word for rain—pula—is also the name of Botswanan currency; and significantly, it is invoked after every tribal or political address (Turton, 2003; Hitchcock, 2000).

It would take millions of *pulas* to measure the cost to human health from lack of access to clean water and sanitation, for water—while necessary for life—can also be a vector for disease and death. Water sources contaminated by sewage can transmit preventable waterborne diseases such as cholera, typhoid, diarrhea, and gastroenteritis. Ninety percent of the wastewater in the developing world is released untreated into local watersheds, and more than 3 million people per year—mostly children—are killed by such diseases (OECD, 2003a). In severely affected countries, water-related diseases kill 1 in 5 children before the age of five (WEHAB Working Group, 2002).

The link between clean water and proper sanitation has been widely acknowledged at both the national and international level. The provision of fresh water is vital to meeting basic human needs and should be at the heart of any sustainable development initiative. Unfortunately, efforts to provide these basic services in the developing world are blocked by large funding gaps and often mired in debates over governance, privatization, and large infrastructure projects. However, small-scale and community-based solutions—the focus of this publication—can help bridge these gaps and move beyond the debates.

The Woodrow Wilson Center's Navigating Peace Initiative, funded by the Carnegie Corporation of New York, brings together experts and practitioners to reframe stale debates and generate fresh thinking on critical water problems. The papers collected here seek to shed light on the challenges of improving access to safe water and sanitation, as well as the possibilities afforded by innovation and cooperation. The initiative thus hopes to contribute to the ongoing discussion by examining alternatives to large-scale infrastructure projects in the water and sanitation sectors, including NGO and community-based water and sanitation efforts, and exploring how lessons learned from small-scale projects can be effectively communicated worldwide.

GROWING DIVIDE

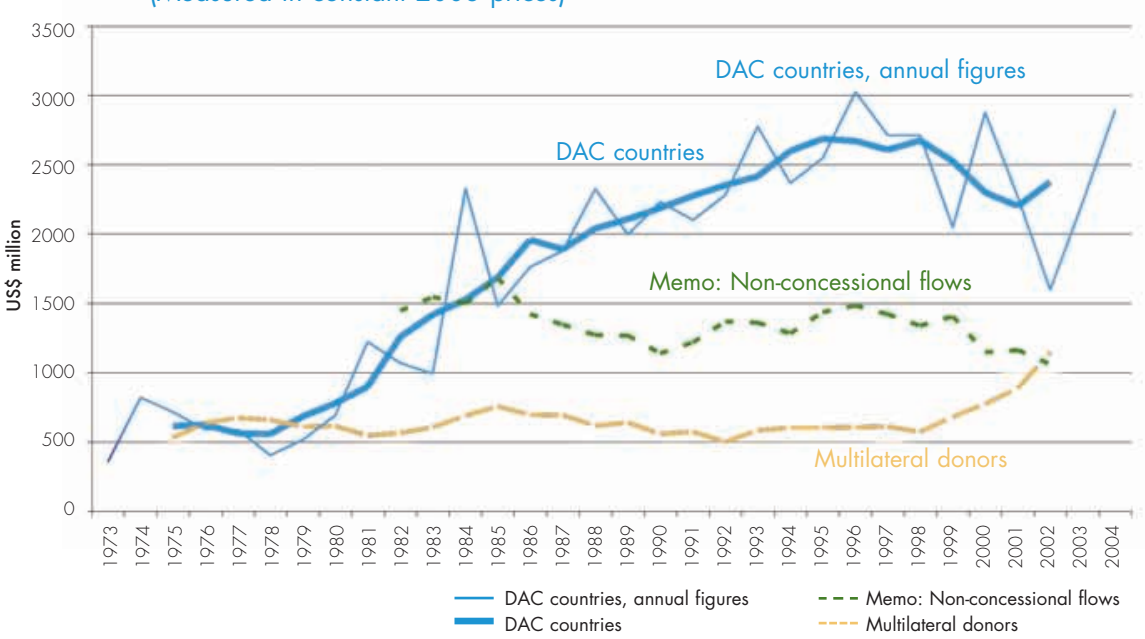
The gravity of the threats posed by lack of access to water and sanitation is revealed by the latest figures of the Joint Monitoring Program of the World Health Organization (WHO) and UNICEF: More than one billion people lack access to fresh water, equal to 17 percent of the

1. For examples, see http://www.unesco.org/water/wwd2006/world_views/water_language.shtml

global population (WHO/UNICEF, 2005).[2] Even more people lack access to sanitation: 2.6 billion people, or 42 percent of the population. In sub-Saharan Africa alone, 42 percent of the population lacks improved water sources and only 36 percent have sanitation services.

This divide is set to drastically increase as the world's water demand doubles every 20 years as the population burgeons (Revenga, 2000). By 2025, 48 percent of the world's projected population will live in water-stressed river basins. Water scarcity and lack of sanitation loom not only as imminent challenges for the countries that lack fresh water or the infrastructure necessary to treat water and sewage, but also as potential sources of conflict. Recognizing these threats, the world community

FIGURE 1: TRENDS IN OFFICIAL DEVELOPMENT ASSISTANCE FOR WATER SUPPLY AND SANITATION FIVE-YEAR MOVING AVERAGE FROM 1973–2004 (Measured in constant 2003 prices)



Note: The Development Assistance Committee (DAC) is the principal body through which the OECD studies issues related to cooperation with developing countries.

Source: OECD (2006) [3]

2. Coverage rate figures were obtained by the Joint Monitoring Programme using an assessment questionnaire, which defined access to water supply and sanitation in terms of the types of technology and levels of service provided. Summary statistics can be found online at http://www.unesco.org/water/wwap/facts_figures/basic_needs. shtml

3. Figure available online at http://www.oecdobserver.org/images//1806.photo.jpg; statistics available at http://www.oecd.org/dataoecd/50/17/5037721.htm

has agreed on three different occasions to set and meet goals to improve water and sanitation: during the first International Drinking Water Supply and Sanitation Decade (1980–1990); the Monterrey Consensus (2002); and the "Water for Life" Decade (2005–2015). This consensus offers an unprecedented opportunity to hold governments accountable to meeting these goals.

The effort to recognize access to fresh water as a basic human right has also gained significant traction. The NGO IUCN notes that there "have been both expressed and implied references to a right to water in public international law," despite the fact that there is no formal recognition of such a right (Scanlon et al., 2000). The International Covenant on Economic, Social and Cultural Rights declared water not only an economic good but also a social and cultural one (ECOSOC, 2002).

Water plays an important role in poverty alleviation and gender equality. According to a report released by Stockholm International Water Institute and the WHO (2005), access to improved water and sanitation increased developing countries' average annual GDP growth rates to 3.7 percent, compared to 0.1 percent for countries without such access. Gender equality has also been directly linked to the availability of adequate supply of fresh water. In many communities, women are the central users or gatherers of water, and also care for children sickened by water-related illness.

CURRENT FUNDING FLOWS = MISSED TARGETS

There are several disturbing trends in aid flows, despite the high level of attention that water and sanitation have received at the international level and an apparent increase in Official Development Assistance (ODA) to the sector (see Figure 1).

After declining in the 1990s, ODA rose to record levels in 2004. However, the increase since 2002 is largely due to debt reduction and rescheduling, and the large jump from 2003–2004 is principally U.S. aid to water projects in Iraq (Clermont, 2006). On the other hand, the 2002 Monterrey commitment by the international community to contribute 0.7 percent of GNP to ODA, and the 2005 Gleneagles Summit commitment to double ODA, offer hope that giving will continue to rise.

Two other disturbing trends in aid flows must be considered: First, most of the aid is going to a handful of middle-income countries; and second, the bulk of the funding is allocated to major infrastructure projects.

Of the total aid in 2000–2001, only 12 percent was given to countries where less than 60 percent of the population had access to an improved water source (OECD, 2003b). Figure 2 illustrates a further concentration in aid: 53 percent of the total is received by 10 countries. According to the World Water Council, allocation is dependent on "the demographic weight of the country…the economic and political stability of the country [and]…its geostrategic visibility" (Clermont, 2006, page 7). Areas with some of the greatest need, such as sub-Saharan Africa, remain on the losing end.

Figure 3 demonstrates the second trend. The vast majority of aid for water and sanitation funds large infrastructure projects, which exacerbates the rural-urban divide: 80 percent of people without access to sanitation live in rural areas, and roughly one-third of rural residents lack access to improved drinking water sources (UNESCO-WWAP, 2003).

Estimates of the investment necessary to achieve the Millennium Development Goal (MDG) to reduce by half the proportion of

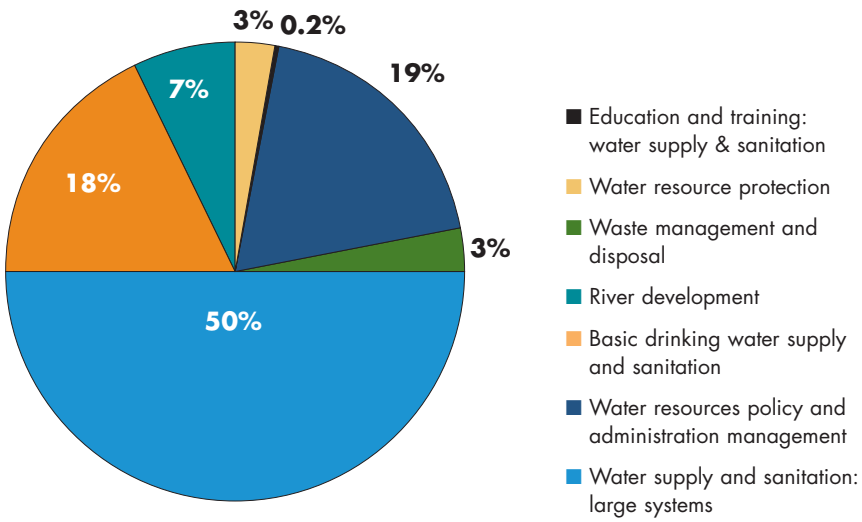
FIGURE 2: MAIN DONORS AND RECIPIENTS OF BILATERAL OFFICIAL DEVELOPMENT ASSISTANCE (ODA) TO WATER SUPPLY AND SANITATION, 2000–2004

(Annual Average Commitments in US$ Million, Constant 2003 Prices)

	Japan	Germany	United States	France	Netherlands	Other DAC Donors	Total DAC Countries
China	222	5	1	6	4	37	275
Iraq	0	1	170	-	0	10	181
Vietnam	52	10	0	17	7	30	117
Palestinian Adm. Areas	2	23	72	5	1	9	113
India	39	8	2	3	18	32	102
Jordan	6	24	45	-	0	12	87
Malaysia	90	-	-	-	-	1	81
Morocco	24	26	2	16	0	7	75
Peru	55	11	0		1	6	74
Tunisia	28	12	-	26	-	1	68
Other recipients	326	254	52	100	93	420	1245
Total	**835**	**376**	**344**	**173**	**124**	**567**	**2417**

Source: OECD (2006) [5]

FIGURE 3: BREAKDOWN OF ODA FOR WATER BY PROJECT TYPE, 1990–2004



Source: OECD (2006) [6]

5. Figure available online at http://www.oecdobserver.org/images//1806.photo.jpg
6. Data available online at http://www.oecd.org/dataoecd/3/29/36253954.xls

people without sustainable access to safe water and sanitation vary from US$9 billion to US$30 billion (Toubkiss, 2006). A comparative analysis prepared by the World Water Council in preparation for the 4th World Water Forum found that the estimates are actually quite similar if analyzed on comparable bases,[4] and that current investment must be roughly doubled to reach the MDG target (Toubkiss, 2006). Reaching the sanitation target will require 2–5 times the expenditure necessary to meet the water targets (Toubkiss, 2006). In addition, 48 percent of the world's projected population growth is expected to occur in areas already experiencing, or expected to experience, water stress, raising the stakes even higher (Revenga, 2000). Within the last few years, donors and NGOs have begun to explore options that will stretch their funding further, and many argue that low-cost, community-based approaches should play a larger role in efforts to meet the MDG.

EXPANDING OPPORTUNITIES FOR SMALL-SCALE WATER AND SANITATION

Given the magnitude of the problem and the disturbing aid trends, we must re-evaluate traditional approaches. "Financing Water and Environmental Infrastructure for All," a background paper prepared for the Commission on Sustainable Development, states that "the most successful programs are those that respond to local demand, with heavy local participation, using low-cost local technology, and without any public subsidy" (OECD Global Forum on Sustainable Development, 2004, page 16).

Water Stories: Expanding Opportunities in Small-Scale Water and Sanitation Projects seeks to move past technical "hardware" evaluations by incorporating "software" issues. To ensure the effectiveness and sustainability of water and sanitation projects, the users must support them. Project designers thus must understand how culture and gender issues affect demand and acceptance by the community. As John Oldfield notes in his chapter, "breakthrough practices in [the water and sanitation sector] are rarely new technological solutions," but are instead those that innovatively and cooperatively apply current technology to meet local needs. Beginning with J. Carl Ganter's photo essay, this publication focuses on this nexus of hardware choices and software understanding, along with a look at the media channels that frame the larger debate.

In "Household Water Treatment and Safe Storage Options in Developing Countries: A Review of Current Implementation Practices," Daniele S. Lantagne, Robert Quick, and Eric D. Mintz summarize five of the most common household water treatment and safe storage (HWTS) options—chlorination, filtration (biosand and ceramic), solar disinfection, combined filtration/chlorination, and combined flocculation/chlorination—and describe implementation strategies for each. They identify implementing organizations and the successes, challenges, and obstacles projects have encountered. They also consider sources of funding and the potential for large-scale distribution and sustainability of each option, and propose future research and implementation goals. They find that "HWTS systems are proven, low-cost interventions that have the potential to

4. Reasons include different assessment scopes, understandings of infrastructure and level of service, and calculation methods (Toubkis, 2006).

provide safe water to those who will not have access to safe water sources in the near term, and thus significantly reduce morbidity due to waterborne diseases and improve the quality of life."

John Oldfield provides a ground-level review of small-scale and rural projects in his chapter, "Community-Based Approaches to Water and Sanitation: A Survey of Best, Worst, and Emerging Practices." Through a combination of research and interviews with leaders from selected NGOs in the water sector—including WaterPartners International, Water For People, WaterAid, Living Water International, CARE, and the Hilton Foundation—Oldfield finds that while community-based small-scale solutions can work well, the most successful projects focus not just on supplying water, but also on sanitation and hygiene, which often are more immediate causes of death or illness. He concludes that "water projects are rarely simple. They are, however, eminently *doable*."

Alicia Hope Herron also stresses the need for a holistic approach to water and sanitation in "Low-Cost Sanitation: An Overview of Available Methods," which presents several options—pit latrines, dehydration systems, pour flush latrines, aquaprivies, and septic tanks—and examines whether these methods are cost-effective, sustainable, and likely to be accepted by users. With sanitation—even more so than water supply—determining which option will be most effective requires weighing a complex set of variables ranging from culture and cost to geology and climate. Not only are these considerations important for efficacy and sustainability, but the lack of consideration of one variable in sanitation planning has the potential to cause serious damage to community health, exacerbating rather than ameliorating an already dangerous situation.

Given the centrality of water to the human condition, why does water fail to rally a forceful, sustained response by the collective global consciousness? It is not the absence of solutions, or even the lack of opportunities—it is a lack of political will. J. Carl Ganter argues that the political will to recognize and address the expanding global freshwater crisis cannot come from random efforts to increase awareness, but from "transcending moments" that create movements. "Navigating the Mainstream: The Challenge of Making Water Issues Matter" argues for a new paradigm for social change—one that recognizes the needs and unites the strengths of citizens, leaders, NGOs, and especially the news media. This approach requires emphasizing relevance, creating or identifying major events, involving varied talents and disciplines, developing new uses of proven techniques, and pioneering communications and information tools.

One old-fashioned but proven way to make water issues meaningful to people is by telling good stories, ones that make the issues personal and relevant, and connect humanity through the simple dramas of life, faith, and culture. The "Water Stories" multimedia website (http://www.wilsoncenter.org/waterstories), also developed by the Navigating Peace Initiative, tells those stories through audio and video presentations of the people living and working in water-stressed communities in Mexico.

Providing clean water and sanitation is a truly monumental challenge and must be addressed from a multitude of angles. *Water Stories* focuses on innovative ways to incorporate a community's needs and demands—the "software" issues—and argues that these opportunities have the best chance of success. However, as Barbara Schreiner (2001), chief director of the Department of Water

Affairs and Forestry of South Africa, observes, "it is an unfortunate aspect of the nature of water that it flows toward power," and therefore the power to make decisions about water and sanitation rarely trickles down to those most in need. This publication hopes to redirect this flow by demonstrating that decisions made by the least powerful can be the most effective. The spectrum of water and sanitation projects is broad enough to allow innovative techniques and collaboration to flourish. By expanding the opportunities for small-scale projects to reach communities in need, we could potentially save some of the 3 million people lost each year to waterborne disease, and help restore water to its rightful place as the giver—not taker—of life.

REFERENCES

Clermont, Florence. (2006). *Official Development Assistance for water from 1990 to 2004.* Paris: World Water Council & World Water Forum. Available online at http://www.world watercouncil.org/file admin/wwc/Library/Publications_and_reports/Full Text_Cover_ODA.pdf

Hitchcock, Robert K. (2000). "The Kavango basin: A case study." Available online from The Water Page at http://www.africanwater.org/okavango_case_study.htm

OECD. (2003a). *Improving water management: Recent OECD experience.* Paris: OECD.

OECD. (2003b). *Supporting the development of water and sanitation services in developing countries.* Paris: OECD. Available online at http://www.oecd.org/dataoecd/27/22/2955840.pdf

OECD. (2006). *Creditor reporter system on aid activities.* Available online at http://www.oecd.org/document/0/0,2340,en_2649_34447_37679488_1_1_1_1,00.html

OECD Global Forum on Sustainable Development. (2004). *Financing water and environmental infrastructure for all: Some key issues.* Paris: OECD. Available online at http://www.un.org/esa/sustdev/csd/csd12/Background6.pdf

Revenga, Carmen. (2000). *Will there be enough water?* Washington, DC: World Resources Institute. Available online at http://earthtrends.wri.org/features/view_feature.php?theme=2&fid=17

Scanlon, John, Angela Cassar, & Noemi Nemes. (2004). "Water as a human right?" (IUCN Environmental Law and Policy Paper No. 51). Cambridge, UK: International Union for Conservation of Nature and Natural Resources (IUCN). Available online at http://www.iucn.org/themes/law/pdfdocuments/EPLP51EN.pdf

Schreiner, Barbara. (2001, December 6). [Keynote Speech to the International Conference on Freshwater]. Bonn, Germany.

Stockholm International Water Institute (SIWI), & World Health Organization (WHO). (2005). *Driving development by investing in water and sanitation: Five facts support the argument.* Geneva, Switzerland, & Stockholm, Sweden: SIWI & WHO. Available online at http://www.siwi.org/downloads/Reports/Driving_Development.pdf

Toubkiss, Jérémie (2006). *Costing MDG Target 10 on water supply and sanitation: Comparative analysis, obstacles and recommendations.* Paris: World Water Council & World Water Forum. Available online at http://www.worldwatercouncil.org/index.php?id=3

Turton, Anthony R. (2003). "A Southern African perspective on transboundary water resource management." *Environmental Change and Security Project Report 9*, 75–87.

United Nations Economic and Social Council (ECOSOC). (2002, November). *Substantive issues arising in the implementation of the international covenant on economic, social and cultural rights: The right to water (Articles 11 and 12 of the*

International Covenant on Economic, Social and Cultural Rights) (E/C.12/2002/11). Available online at http://www.citizen.org/documents/ ACF2B4B.pdf

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2006). *Water and world views: The water language.* Available online at http://www.unesco.org/water/wwd2006/world_views/water_language.shtml

UNESCO-World Water Assessment Program (UNESCO-WWAP). (2003). *Water for people, water for life: The UN world water development report.* Barcelona: UNESCO & Berghahn Books. Available online at http://unesdoc.unesco.org/images/0012/001295/129556e.pdf

Water Energy Health and Biodiversity (WEHAB) Working Group. (2002, August). *A framework for action on water and sanitation* (United Nations preparation for the World Summit on Sustainable Development). Available online at http://www.un.org/esa/sustdev/publications/wehab_water_sanitation.pdf

WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation. (2005). *Water for life: Making it happen.* Geneva, Switzerland: WHO & UNICEF. Available online at http://www.unicef.org/wes/files/ JMP_2005.pdf