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**Water, U.S. Foreign Policy and
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Foreword

As part of a research and policy initiative on climate change and water security, The George Washington University's Elliott School of International Affairs, the Atlantic Council and WASH Advocates convened a workshop in January 2012 at the Elliott School entitled *Actualizing the Upside of Water: Development, Diplomacy and Defense*. The workshop, held under Chatham House Rules, brought together over thirty thought and policy leaders in water issues from ten U.S. government agencies, academia, and nonprofit organizations.

The workshop was motivated by the findings of the February 2012 Intelligence Community Assessment on Global Water Security that highlighted the need for urgent action to address global water needs or face adverse consequences within the next ten years. With this assessment as background, the purpose of the meeting was to spark a conversation that would increase awareness of the leadership opportunities that water offers across the foreign policy spectrum and develop specific recommendations to expand, enhance and leverage the U.S. government's relationship with water across the globe.

Realizing that the dialogue needed to be expanded, participants re-convened in February 2013 for a conference on *Water, U.S. Foreign Policy and American Leadership*. Skoll Global Threats Fund, the U.S. Water Partnership and WASH Advocates collaborated on this effort. The 2013 conference brought civil society – including philanthropists, NGOs and business leaders – into the conversation with the first workshop's government participants to plan for an urgent “whole of U.S. response” to water-related leadership opportunities across the developing world.

The following report is inspired by and expands upon these two conversations. We hope that this report's recommendations will focus the reader on the central role of water in U.S. foreign policy, but most importantly, catalyze specific actions bringing tangible benefits to those in the U.S. and abroad.

Sincerely,

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Executive Summary

Water is a strategic commodity. Challenges related to ensuring safe and sufficient water across the globe are considerable, and will grow significantly in the coming years. As highlighted by a 2012 Intelligence Community Assessment on Global Water Security (ICA), the U.S. government (USG) and others pay a great deal of attention to the risks associated with water around the world. These comprise public health challenges, poverty, regional and local threats of conflict, food security, environmental refugees and changing climatic conditions, to name a few.

The first section of this report finds that addressing water challenges today is not just good policy, it is good politics. Water aid currently enjoys favorable national public opinion, a broad constituency and bipartisan support. The time for action is ripe. The USG has the potential to maximize the “upside” of water, or the opportunity to carve out, or in some cases maintain, a leadership role across the three dimensions of foreign policy: development, diplomacy, and defense. A case study on Ethiopia illustrates how all three dimensions come into play.

While water has long been a part of U.S. foreign policy, this report finds that the USG is not sufficiently organized to utilize the resources at the disposal of the relevant agencies to provide a robust response to global water challenges. The report calls for a realignment of these resources to elevate the role of water in U.S. foreign policy. Recommendations are geared toward specific government agencies and the “whole of government.” If recommendations are taken seriously, the United States can enact more effective water policy while bolstering its standing in the global community.

The second section of this report is based on a subsequent workshop designed to provide a partial answer to the question of who will implement the implicit recommendations of the ICA. In addition to government, it brings diverse private sector organizations into the conversation and finds that a “whole of U.S.” approach that engages all stakeholders could be the most effective strategy.

An in-depth discussion of each participant’s expertise, interests, strengths and weaknesses in global water led to two key findings that leverage, accelerate and expand efforts to provide global water assistance. The first was the importance of developing new approaches or vectors for change, such as market-driven mechanisms and public-private partnerships that are as inclusive as possible and especially relevant when USG financial resources are constrained. The second is the importance of engaging the technical capacities resident in a raft of USG agencies and private sector organizations to provide data to water project implementers and host country governments.

Part I Actualizing the Upside of Water - Development, Diplomacy and Defense: “A Whole of Government” Approach

The Strategic Value of Water

Why water? Why now?

Challenges related to international water security – including ensuring safe and sufficient water across the globe and preventing local and international conflict in key water basins – are considerable, and will grow significantly in the coming years. Although it comes as a surprise to many, history has shown that water issues are more likely to lead to cooperation between nations than conflict. Water has been a productive pathway for building confidence, developing cooperation and preventing conflict even in some of the most contested river basins.¹ It is, in fact, difficult to identify any international conflict that has been caused exclusively by water. However, local conflict over water resources is common.

Global water-related trends do not look positive. There are many areas around the world that suffer from water poverty (or lack of freshwater) where U.S. economic and security interests are clearly at stake. In 2008, the U.S. National Intelligence Council (NIC) judged 21 countries, with a combined population of about 600 million, to be either cropland- or freshwater-scarce. They projected that owing to continuing population growth, 36 countries, home to some 1.4 billion people, would fall into this category by 2025.²

“During the next 10 years, many countries important to the United States will almost certainly experience water problems – shortages, poor water quality, or floods” – ICA 2012

The ICA, argues that “during the next 10 years, many countries important to the United States will experience water problems—shortages, poor water quality, or floods—that will contribute to the risk of instability and state failure, and increase regional tensions. Additionally, states will focus on addressing internal water-related social disruptions which will distract them from working with the United States on important U.S. policy objectives.”¹

Water insecurity is a triple threat to food, energy and health. It diminishes agricultural productivity, limits energy options by reducing the amount of water available for hydroelectric power or power stations cooling and contributes to the spread of disease due to inadequate sanitation. These conditions erode the legitimacy of governments that are unable to provide a robust response.

¹ The ICA is available at http://www.dni.gov/nic/ICA_Global%20Water%20Security.pdf

The rapid-onset of climate change is another reminder that the window to make successful interventions to promote peace and stability and take advantage of the “upside” of water may be closing. The Pentagon has labeled climate change and its effects on water supply as an accelerant of instability. The CNA Corporation, a U.S. defense think tank, predicts that when combined with other factors such as degraded infrastructure or poor governance, climate change is likely to become a “threat multiplier for instability in some of the most volatile regions of the world, [presenting] significant national security challenges for the United States.”³

New climate science studies, combined with intelligence forecasts and some academic studies, raise doubts that water issues will continue to engender more cooperation than conflict, providing additional justification for urgent action to address water concerns. The ICA predicts that as water becomes scarcer over the next ten years, it will likely exacerbate disputes in shared river basins.⁴ States may employ the “water weapon” as a means of coercion against rivals for water resources in areas where cooperative solutions have prevailed.

As climate change accelerates, some regions will be particularly vulnerable due to both increasing water scarcity and abundance. Long-term trends from 1900 to 2005 that are expected to at least continue, if not accelerate, indicate a reduction in precipitation over large regions, including the Sahel, the Mediterranean, southern Africa and parts of southern Asia.⁵ The Intergovernmental Panel on Climate Change (IPCC), the authoritative body of climate scientists convened by the UN, aggregated a series of regional climate models in their 2007 Fourth Assessment Report (AR4). They found that precipitation will generally decrease over the lower sub-tropics and increase over the high latitudes.

A reduction in precipitation can lead to a scarcity of water for human consumption and ecosystem services. The IPCC finds a high likelihood of a general decrease in precipitation in the Mediterranean. A decrease is likely in the southern Andes, Central Europe and Central America. The Sahel region of northern Africa, Central Europe, Central America, the southern Andes, southern Africa and Oceania are expected to receive extreme seasonal decreases. Most of these regions are expected to experience high population growth. Australia, the Mediterranean, Central Europe and Central America will be especially prone to drought.⁶

In contrast to scarcity, higher levels of precipitation, such as that predicted for regions of sub-Saharan Africa, also present water security challenges. One example is floods that can contaminate drinking supplies and destroy crops. Last year, floods in Pakistan affected over five million people and damaged or destroyed over 460,000 homes. Contaminated rain water can also inundate local clean water reservoirs or sewage disposal infrastructure. Severe flooding in western Africa and the Sahel significantly impacted three million people across 15 countries in 2012.⁷

Warmer temperatures predicted by the IPCC will also have an effect on water resources. Evidence for this prediction is supported by the fact that 2012 was the hottest year on record for the United States and the 9th hottest worldwide since 1880.⁸ Higher temperatures will alter

the timing of glacial melting, eventually threatening the water supply of hundreds of millions of people in Asia and South America. Higher temperatures are causing the Arctic icecap to melt at an alarming and unpredictable rate, resulting in sea level rise that may cause saltwater intrusion into freshwater supply. A number of peer-reviewed studies published after the 2007 IPCC AR4 have supported the IPCC results, finding, for example, that rains will become more intense during an earlier timeframe than early climate models predicted.⁹

A subsection of the forthcoming IPCC's Fifth Assessment Report (AR5) was released in October 2013, expanding upon the severity of the AR4's findings detailed above. The AR5 will be the first to include a chapter assessing climate change's impacts on human security, including changes in water supply. This chapter will provide useful data for policymakers but will also demonstrate the severity of climate change's negative socio-economic impacts. Failure to adapt to these impacts will also erode the legitimacy of fragile states important to U.S. interests.

In an attempt to avoid the grim scenarios described above, the United States has an opportunity to lead the global community toward the development and implementation of practices and technologies for improved management of water resources. Doing so will require a higher level of engagement and more financial resources than the USG can muster alone. Public-private partnerships (PPPs) are a good way to leverage private sector innovation and capital.

Our 2012-2013 workshops were premised on the need to raise water security to the forefront of the foreign policy agenda, with the aim of averting the scenarios forecasted by U.S. intelligence and defense communities. During a panel at the Woodrow Wilson Center for Scholars last year, Ellen Laipson, president of the Stimson Center observed, the aggregated judgments of the ICA stand in sharp contrast to the disaggregated realities on the ground in developing countries. Our workshops focused on how various U.S. organizations could leverage each other's technical, financial and political assets to change these ground truths and increase global water security.

Water, a Common Cause

The national security community has made it clear to receptive audiences that preventing instability in nations important to U.S. national security interests is good policy. However, we argue that it is not only *good policy*, it is *good politics*. With water aid enjoying broad support among the American people and in Congress, now is a politically opportune time for the Obama Administration and other U.S. organizations to promote water security.

Favorable Public Opinion

Although Americans are not generally enthusiastic about foreign aid, water assistance draws strong public support. In a poll conducted in 2012, 67% of respondents indicated that access to

clean water should be the top priority of U.S. efforts to improve health in developing countries.¹⁰ The global War on Terror was the only foreign affairs priority ranked higher.

In 2000, UN General Assembly made a pledge to end extreme poverty and deprivation by 2015. This pledge was realized with the Millennium Development Goals (MDGs), a series of ambitious targets established and agreed to by all 189 UN member states. While a 2010 survey found that Americans were generally unfamiliar with the MDGs, once the goals were briefly described by the pollsters, 83% of respondents indicated that ensuring safe access to water should be a top priority.¹¹ Access to safe water is intrinsic to achieving several goals including eradicating hunger, reversing the spread of preventable diseases that cause child mortality and increasing economic development.

Broad Domestic Constituency

U.S. water assistance programs are implemented and supported by a broad domestic constituency. From a “whole of government” perspective, implementation of a U.S. global water strategy requires coordination from international defense, development and diplomatic government organizations and a raft of agencies with a domestic policy or technical focus. From a “whole of U.S.” perspective, corporations, educational institutions, NGOs and faith and philanthropic communities all play a vital role in planning and implementing international water projects.

Broad coalitions support American leadership in water assistance.

- The U.S. Water Partnership, announced by Secretary of State Hillary Clinton on World Water Day 2012, is a broad alliance of 19 government agencies and 50 diverse members from civil society, foundations and the private sector, which mobilizes U.S. expertise, resources and ingenuity to address global water challenges.
- In the civil society sector, The Millennium Water Alliance is a coalition of 13 U.S. and international charities and NGOs founded in response to then-Secretary of State Colin Powell’s remarks at the 2002 World Summit for Sustainable Development to “reduce by half, the proportion of people without access to safe and affordable drinking water and sanitation” by the year 2015.
- In the area of Water Sanitation and Hygiene (WASH), The Global Water Challenge (GWC) draws upon the expertise and assets of 38 corporations, nonprofits, research institutes and governmental agencies in the water and sanitation sectors to expand its goal of providing universal access to clean water and safe sanitation.

Individual American citizens from all fifty states are engaged in water projects. Unlike many large infrastructure programs, water assistance projects can be implemented at a smaller scale, allowing individuals to take foreign policy into their own hands. Rotary International administers a program in conjunction with USAID that allows citizens to apply for grants to

carry out water projects in developing countries. WASH Advocates, a nonprofit organization that promotes global sanitation, hygiene and safe drinking water, has developed a map demonstrating the location and purpose of assistance projects led by citizens and non-governmental initiatives in every state.²

The broad range of U.S. organizations that provide water assistance exemplifies an American brand. The idea of a national brand, which can be defined as the global perception of a country's fundamental common purpose, is an emerging concept in international relations but one familiar to the corporate sector. Generally, the world holds the American brand in high regard. The Anholt-GfK Roper Nation Brands Index, an annual survey which tracks the image and reputation of the world's nations, has consistently ranked the American brand as first in the world.¹² It takes factors such as tourism, exports, governance, people, culture and heritage, investment and immigration into consideration. Another positive factor is the perception of a unique American ingenuity in technology development which has led to breakthroughs including space travel and the internet. As a form of public diplomacy, U.S. water assistance that includes project implementation at the national and people-to-people level maintains and strengthens the national brand.

Bipartisan Support

Water issues have a robust history of bipartisan support in the United States. The *Clean Water Act of 1972*, which banned surface water pollution nationwide, enjoyed strong support among congressional Democrats and Republicans. Public awareness has evolved over the years from concern for water pollution and toxins in drinking supplies to unease over the vulnerability of water supply and infrastructure. Recent Republican and Democratic national party platforms have explicitly supported water programs.¹³

There is evidence that American support for water-related priorities translates from the domestic onto the international stage. The majority of Americans endorse a financial commitment in support of the MDGs, including improved water and sanitation programs. Support was higher among Democrats (77%) but a majority of Republicans (57%) still voiced support for the MDGs.¹⁴

Congress is attentive to the American peoples' explicit concern for achieving global water security. The bipartisan *Water for the World Act 2013* (H.R. 2901), introduced in August by Rep. Earl Blumenauer (D-OR) and Rep. Ted Poe (R-TX), builds on the landmark *Senator Paul Simon Water for the Poor Act of 2005*, which made safe drinking water and sanitation a priority of U.S. foreign development assistance. H.R. 2901 is a reintroduction of the bipartisan *Water for the World Act 2011*, which had 27 cosponsors in the Senate and 70 in the House of Representatives prior to the end of the 112th Congress.

² The interactive map can be accessed at <http://www.washadvocates.org/learn/wash/>

The recently introduced *Water for the World Act 2013* has 16 cosponsors, including 12 Republican members of Congress, demonstrating that water security is a rare issue bridging the bipartisan divide in Congress. The bill calls for improving the effectiveness, transparency and accountability of existing U.S. water and sanitation aid programs abroad. It incorporates strengthened monitoring and evaluation techniques and complements the \$405 million FY 2014 WASH budget approved by the Senate Appropriations Committee. The bill represents the most funds ever appropriated by any Congressional committee for water and sanitation.

In support of this budgetary request, Christian Holmes, U.S. Agency for International Development (USAID) Global Water Coordinator; Aaron Salzberg, U.S. Department of State Special Coordinator for Water Resources; John Oldfield, CEO of WASH Advocates; Malcolm Morris, Chairman of the Millennium Water Alliance; and Buey Ray Tut, Executive Director at Aqua Africa testified before the U.S. Congress House of Representatives Committee on Foreign Affairs Subcommittee on Africa, Global Health, Global Human Rights and International Organization on August 1, 2013, on the impact of U.S. water programs on global health.

The extensive testimony called for the subcommittee to recognize how water will impact health, food security, energy security and our ability to manage the effects of water-related disasters and climate change. The subcommittee members were asked to work with their appropriations colleagues to support increased funding and oversight for development assistance. The United States has played a significant role in helping to address global water-related security concerns. However, much remains to be done on these issues.

If passes, *The Water for the World Act 2013* could be the one of the few bills passed by unanimous consent in the second Obama Administration and provide a basis for American leadership on water, including possibly greater cooperation between U.S. branches of government. President Obama's first inaugural address recognized the undeniable link between water and human security and committed the United States to cooperative water aid projects.

*"To the people of poor nations, we pledge to work alongside you to make your farms flourish and let clean waters flow; to nourish starved bodies and feed hungry minds. And to those nations like ours that enjoy relative plenty, we say we can no longer afford indifference to the suffering outside our borders nor can we consume the world's resources without regard to effect. For the world has changed, and we must change with it."*¹⁵

Americans must do more to understand and communicate the severity and urgency of global water challenges. While there is broad political support for water projects, few Americans appreciate how pervasive water is. The American public may understand that food security, energy security, health, and national security are related challenges but they are less aware that water is a common denominator in each case.

Water, a Vital Part of U.S. Foreign Policy

Water has been a vital component of U.S. international development strategy for decades. However, the USG is not currently postured to deliver water-related assistance as efficiently as possible or to expand considerations of water into other dimensions of foreign policy. Efforts to address this problem are underway, but more could be done.

For example, the 2010 Quadrennial Development and Diplomacy Review (QDDR) called for the inclusion of water development projects as a critical element of a larger climate adaptation strategy. It provided a roadmap for how the Department of State and USAID could work to integrate their general development efforts.

USAID has made outstanding progress in elevating global water issues. In May 2013, the agency released its first ever *Water and Development Strategy*, a five year plan to enhance global health and food security through a focus on water resources. The strategy prioritizes local capacity building, strengthening partnerships, leveraging new technologies and supporting innovative financing – precisely the types of pioneering approaches called for by the participants in our workshops.

What remains to be seen is how effectively the agency will implement the proposed cutting-edge approaches to achieving its water and development priorities. Increased use of monitoring and evaluation techniques to assess project impact and sustainability will be a good start. Appropriate measures of project success provide essential guidance for other USG agencies to prioritize, plan for and implement water security initiatives. USAID's focus on water is a leading indicator that the time is ripe for other organizations to prioritize global water-related needs.

While the QDDR and USAID water strategy recognize the importance of water as part of a suite of development issues, they do not call for the type of “vertical” and “horizontal” integration of water into all three dimensions of foreign policy, development, diplomacy and defense that workshop participants discussed and that this report advocates for.¹⁶

Session 1: Development

Mandate, Money and People

Water is pivotal to nearly every major issue the development community is engaged with, including global health (malaria, HIV/AIDS and other threats), environmental sustainability, poverty alleviation and education. Unsafe water provides a direct vector for diseases such as cholera. Although water is not a vector for HIV/AIDS, many opportunistic infections (e.g. diarrheal diseases) that kill people afflicted with this disease are transmitted through contaminated water.

In recognition of water's vital role across the development spectrum, USAID established a position for a Global Water Coordinator in 2011, which began to draft the first-ever comprehensive strategy for water, released in September 2013.

While most of the 2012 workshop participants were not familiar with the intent of the strategy, they suggested that it will be necessary to adopt a more deliberate water development process for a given country. The necessary components to building effective water programs are *mandate, money, and people*. In other words, there must be a clear mission statement, sufficient funding, and the will power to execute a plan. It is difficult for one agency to line up these three elements in a specific country, making interagency coordination essential. Such a process might begin with working with the host country government to develop a five-year water assistance implementation plan, with a schedule and milestones.

Accurate hydrological and meteorological assessments are critical to good planning. If a country lacks the ability to collect such data, the USG has resources that could address this need. The U.S. Geological Survey (USGS) and the National Aeronautics and Space Administration (NASA) are examples of agencies whose technical capacities, such as satellites, could be better leveraged to provide information for partner countries. However, there has been a general decline in relevant technical skills in all agencies including USAID.

“The necessary components to building effective water programs are mandate, money, and people. It is difficult for one agency to line up these three elements in a specific country, making interagency coordination essential.” – Workshop participant

Another important factor is communication surrounding best practices. Such communication should involve as many stakeholders as possible. There is currently no systematic approach to such coordinated communications efforts within the USG.

Session 2: Diplomacy

Leverage and Focus

Implementing water diplomacy is difficult principally for two reasons. First, the State Department and USAID must do work with relatively scarce resources and seek leverage wherever possible.

It is questionable whether the State Department has adequate human and financial resources to devote the requisite attention to conflict prevention through water diplomacy. The shortage was reflected in remarks by former U.S. Secretary of Defense Robert Gates in 2007. According to Secretary Gates:

“The reality is the Department of State and the Agency for International Development were starved for resources for decades. Working for me are two million men and women in uniform. [...] Secretary Clinton has I think somewhere south of 7,000 Foreign Service officers. If you took all the Foreign Service officers in the world, they would barely crew one aircraft carrier. So, you know, just to keep things in perspective.”¹⁷

Therefore, the State Department, which has limited personnel and resources, needs to leverage the capabilities of other organizations, such as multilateral organizations, NGOs and credit facilities.

Second, traditional diplomacy is based on interactions between and among nation states. With water, however, it can be especially effective to focus on the *communities* of greatest need even if it must be done on a subnational (provincial, municipal) basis. Pakistan is an example of where aid can be more effectively targeted toward “local pockets” which have significant water challenges and where there is more of an opportunity to succeed. The landmark *Senator Paul Simon Water for the Poor Act of 2005* advocates this approach. The *Water for the World Act of 2013* is bipartisan legislation designed to further improve the efficiency of water aid delivery. It requires greater transparency – advocating best practices such as improved monitoring and evaluation and leveraging non-USG funds.

The multilateral and transboundary nature of many water issues such as those involving shared river basins presents a similar set of diplomatic challenges. Solutions targeted toward individual states are not effective under these conditions and regional organizations or negotiation regimes (to which the United States may not be a party) are generally most effective.

The session identified another vexing problem. Opportunities for the exercise of “soft” power are lost because successful USG water programs often go unrecognized both by the USG and by the people who benefit from them. The importance of the USG *not* taking credit for projects in

situations where it would diminish perceptions of the effectiveness of the host nation's government was described as necessary in some cases.

“Opportunities for the exercise of ‘soft power’ are lost because successful USG water programs often go unrecognized both by the USG and by the people who benefit from them.” – Workshop participant

Despite these challenges, tremendous opportunity exists for the United States to strengthen its global leadership role by making water issues a foreign policy focal point of a soft” power strategy. For example, the State Department could facilitate early discussions about emerging water conflict or assistance in the development of water sharing regimes in areas such as the Himalayan Plateau, and the Jordan, Indus, Mekong, Nile, and Tigris-Euphrates river basins.

Session 3: Defense

Mission and Coordination

Strategic Considerations:

The Department of Defense (DoD) is addressing water issues on several levels but “vertical integration” of policy within the department remains a challenge. The Quadrennial Defense Review (QDR) and other high-level planning documents such as the National Defense Strategy do not provide strategic guidance for engagement with water issues. The idea of addressing water scarcity is inherent in DoD climate change adaptation strategy but this document provides guidance primarily within the Department.

The Office of the Secretary of Defense (OSD) established the Defense Environmental International Cooperation Program in the 1990s. The Deputy Undersecretary for Installations and Environment (DUSD I&E) is responsible for executing the program. The program focuses on strategic partnerships to build foreign resilience and capacity on environmental issues that affect defense infrastructure, training spaces or operations. Environmental impacts on ecosystems including water quality and scarcity are among these issues. DUSD I&E provides training programs that can identify ecosystem vulnerabilities, particularly in Africa.

At the agency level, DoD has established other mechanisms to engage partner nations on environmental issues. The Arctic Council, a high-level intergovernmental forum founded in 1996, was one of the earliest examples of such cooperation. The Council held a summit on the issue of climate change’s impacts on military infrastructure, a non-controversial topic among that group.

The U.S. Army Corps of Engineers (USACE) is operating on a more diffuse and technical level, maintaining an extensive network of experts undertaking diverse projects related to everything from water supply to flood management to hydroelectric power. In the U.S., USACE has established laboratories for hydraulic engineering modeling to help forecast emergencies arising from water scarcity and is training local people in emergency response. USACE also works internationally on public works programs.

The U.S. Army Reserve also has a strong and unique role to play in water security. These citizen-soldiers may possess relevant technical skills such as engineering. Under the leadership of Lieutenant General Jeffrey Talley, the 200,000-member Army Reserve is becoming more active in the area of water security.

Regional Issues:

At another echelon of authority, the regional Combatant Commands (COCOMS) incorporate water considerations into their operational planning. The Balkans and East Africa are two regions where water has been actualized as part of a defense strategy.

The aftermath of the Kosovo War is an example of employment of all three dimensions of U.S. foreign policy. A peace treaty was signed following the cessation of violence in 1999. U.S. military organizations and relief agencies worked together to provide water and sanitation infrastructure. Because it was a post-conflict treaty, the defense community worked closely with USAID to develop a detailed, multi-year program.

In East Africa, DoD retains a primary interest in preventing the formation and proliferation of violent extremists. Therefore, workshop participants suggested that some funding for Africa Command (AFRICOM) and the Combined Joint Task Force Horn of Africa (CJTF-HOA) – a military organization formed to provide stability in East Africa that is being overwhelmingly directed toward kinetic missions – could instead support building ties with local populations through cooperation around water projects. This issue comes up more frequently in discussions with local leaders than combatting terrorism. Such cooperation is possible because AFRICOM is positioned to enact approaches to infrastructure development through coordination with USAID and the State Department as a means to strengthen partner nations' ability to govern. AFRICOM's command structure is unique among U.S. geographic-based commands because it has co-equal deputies, including a State Department official.

Tactical Issues:

Afghanistan and much of Iraq are water-stressed regions. Improving infrastructure is an integral component of gaining public support in conflict areas. Provincial Reconstruction Teams in Afghanistan and Iraq undertake a variety of water-related projects in support of this goal. As of June 30, 2011, the United States had expended \$2.57 billion to rehabilitate Iraq's water and sanitation sectors with mixed results.¹⁸

Post-conflict Reconstruction:

Water plays a major role in post-conflict reconstruction. A recent study by Col. Shannon Beebe and Mary Kaldor on war, peace, and human security argued that, "In most 'new wars,' the foundations of modern existence—electricity, water and sanitation, and garbage collection—are badly damaged. After security has been achieved reestablishing these foundations is often the biggest priority of people who have been through war. The international community has a very poor record in providing these services."¹⁹

The Department of Defense lacks a comprehensive water strategy. Due at least in part to the lack of such strategic guidance, there is little coordination between DoD components at various levels that engage in water projects. For example, there is no driver to ensure that water is part of the conversation when formulating defense policy at a regional or tactical level. Specifically, there is a failure to communicate about water issues across the combatant commands themselves. The need for water projects is likely more obvious to the ground commander engaged in counterinsurgency (COIN) but he may not be supported by doctrine or strategic guidance.

Most of the preceding discussion comes down to mission relevance. DoD's strategy does not consider, or plan for, water in the post-conflict reconstruction phase. The Department of Defense has limited resources available to perform all of the tasks described above. It is difficult to see how DoD will shift assets toward addressing water security during this period of budget sequestration.

During the workshop, it was noted that funding military exercises and law enforcement activities is within DoD's mission mandate. Such projects might contribute to development goals as a byproduct, but that is not the main objective. However, water insecurity contributes to both droughts and flooding, conditions that may increase the demand signal for humanitarian operations led by the U.S. military.

Ethiopia: An Opportunity for U.S. Water Leadership

As a case study the workshop participants discussed water security in Ethiopia and how it relates to U.S. foreign policy. Ethiopia is a country where U.S. development, diplomacy and defense interests are all at stake and where the USG has the opportunity to actualize the upside of water across the foreign policy spectrum.

Assuming that the USG has sufficient awareness of the opportunity, the question is whether the U.S. has the **money, mandate and people** necessary to develop a successful water program in Ethiopia? The workshop participants took a closer look.



Figure 1

Source: Google Earth

Climatic Conditions

As evidenced by the satellite map above (Figure 1) which depicts vegetation coverage, Ethiopia is a country subject to water scarcity in some regions while others are experiencing abundance. Ethiopia has high exposure to climate change, its socio-economic systems are highly sensitive to climate variability, and the adaptive capacity of its peoples varies by geographic region, economic activity, socio-cultural make up and environmental considerations.²⁰ Currently,

38% of the population has access to improved water sources and 12% of the population has access to sanitation facilities. Generally, urban areas have better access to water than rural areas.²¹

Agriculture is the mainstay of the country's economy, accounting for almost 48% of its GNP²² and approximately 80% of the total employment.²³ Small scale, rain-fed subsistence farms and livestock rearing dominate the agricultural sector. This critical sector has been adversely affected by changing temperature and rainfall regimes and the occurrence of climate-related hazards such as droughts and floods. The droughts have been especially severe. While some areas of Ethiopia have abundant water, six major droughts have occurred since 1984, often leading to famine conditions. The famines have been exacerbated by regimes that have used food as a weapon or reward for support and have failed to construct infrastructure to solve water challenges in areas of need.

Social Implications

An important social implication of water scarcity is that Ethiopian women now spend more time away from home retrieving water. One workshop participant observed that in addition to its physical impacts, this situation has detrimentally affected the relationships between women and their spouses and children.

Despite some of the complications noted above, the results of U.S. water assistance in Ethiopia are grounds for optimism. Historically, U.S. water projects have had a degree of success in Ethiopia and have brought significant benefits to the people, including improved markets, agricultural development, better health clinics and more access to education for females.

History provides important guidance to today's USG. Past USG experience with development of water programs in Ethiopia has found that it is necessary to:

- Integrate water into national and local plans;
- Promote community management for project sustainability;
- Include local NGOs in project implementation.

This guidance remains relevant today in Ethiopia and can be applied to other nations where the USG is working to provide water assistance.

Diplomatic Opportunities

Ethiopia presents the opportunity for a new kind of diplomatic engagement. U.S. funding is generally directed toward humanitarian efforts, famine-related emergencies and public health projects such as President's Emergency Plan for AIDS Relief (PEPFAR), rather than long-term sustainable development or

diplomacy that may prevent future outbreaks of conflict. As a key strategic partner in regional efforts to combat terrorism, Ethiopia receives U.S. military aid and assistance and is now a base for U.S. drone operations into Somalia and elsewhere in the Horn of Africa.²⁴ The opportunity for diplomatic engagement relates to Ethiopia's extraordinary dependence on the Nile for its energy and large investment plans in hydropower. Eight dams are currently in operation, with 23 more planned by the Ethiopian government.²⁵ Construction of these dams will provide the public with reliable electricity while offering an opportunity to sell electricity to other regional governments. However, those same dams will likely displace populations and spur migration issues as well as affect relations with the downstream riparians (downstream nations).

The Nile Basin Initiative (NBI) is a partnership among the riparian states of the Nile that has been largely successful in promoting peace and preventing conflict over shared water resources. The World Bank currently holds the mandate to support the work of the NBI, as lead development partner and as administrator of the multi-donor Nile Basin Trust Fund. The participants encouraged the Department of State to work in conjunction with the World Bank to ensure that the NBI survives and is strengthened over the long term. Moreover, it should support ratification and implementation of the Cooperative Framework Agreement (CFA) under the NBI. The NBI would essentially replace the current colonial-era water sharing agreement that reserves most of the water for Egypt and Sudan and would allow upstream riparians a greater share of the Nile's waters.

As one participant noted, the theory behind supporting the NBI is the effectiveness of its "Equitable Use Principle," or the balancing of each country's needs during the water allocation process rather than dividing it by equal percentages. This approach relies on good science to accurately allocate water and presents an opportunity for "science diplomacy." Geologically, Ethiopia sits on unexploited aquifers. Deployment of U.S. technology to identify and utilize this water efficiently might reduce Ethiopia's dependence on Nile waters.

Security Challenges

Ethiopia is a key strategic partner that presents potential for conflict on national and regional levels and creates conditions for violent extremism. Regional conflict between nations is perhaps the greatest water-related security challenge. As Ethiopia increases its water usage for household, agricultural, energy and industrial purposes, it is likely to further divert water for dam projects, bringing Ethiopia into direct conflict with Egypt. Egypt is deeply concerned about this issue and could perceive that limitation of water flow from the Blue Nile would constitute use of the "water weapon," providing justification

for war. As in other parts of the world, water infrastructure in Ethiopia could be susceptible to terrorist or state-sponsored attack.

Ungoverned spaces in adjacent Somalia already provide bases for terrorist groups such as al-Shabaab and pirates that perpetrate violence and disrupt trade flows. Persistent, low-level conflict is taking place in Ethiopia, predominantly between insurgents and the government. However, the connections between violent extremists and water are unclear. It is difficult to determine the extent to which water scarcity inspires these movements since other factors such as poor governance are at play.

Conflict is taking place on a localized level between pastoralist groups from Kenya and Ethiopia over depletion of the Omo River and the related shrinkage of Lake Turkana. The steadily shrinking lake has completely disappeared from Ethiopia, leading to migration of Ethiopian pastoralists to Kenya. This migration has led to conflicts between communities on the lake.²⁶ Climate change and projected rapid population growth will also add to existing water stresses, significantly changing the conflict dynamic. Therefore, water projects should be an integral part of climate change adaptation strategies implemented on a multilateral basis in the region.

Armed conflict between pastoralist groups. Lake Turkana, Kenya.



Source: Yale Environment 360

It is worth noting that the U.S. military, through AFRICOM and its CJTF-HOA, has become more involved in Ethiopia water assistance projects. Civil society organizations have raised legitimate questions of whether the military has the mission and capacities to engage in and, more specifically, sustain these projects.

Findings

The USG has the opportunity to prioritize, develop and implement stronger water management policies that address development, diplomacy and defense challenges. Participants found that access to water is an urgent issue, and that the time is ripe for a “whole of government” approach to pursue the opportunities that water affords. This approach includes greater U.S. advocacy for water projects within multilateral development institutions such as the World Bank.

Three conditions are necessary to implement effective water programs. There must be a clear mission statement, sufficient funding and the will power to execute it. Participants found these conditions are often extremely difficult to meet even in countries that are in obvious need of assistance.

The ICA can facilitate operational guidance. The 2012 ICA, written at the request of the State Department, has increased the visibility of water within the Administration and in Congress. The classified National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030, released in 2008, played a key role in elevating climate considerations into key strategic documents such as DoD’s QDR and the National Security Strategy. This led the armed services and others to begin incorporating climate change mitigation, adaptation and response strategies into their operations. The same need and opportunity exists today with water.

Lack of information sharing within and between government agencies is a key vulnerability. There is no system in place for sharing information between the various USG actors and stakeholders with roles in water projects. Both “vertical” information sharing - such as that within an agency - and “horizontal” sharing - between agencies - have been equally problematic. A stronger system would support best and emerging practices in water management. Coordination with non-USG actors is equally important. As one meeting participant observed, “each side does not know the top ten blazing success stories of the other.”

Lack of technical skills in the USG also presents barriers. USAID lacks sufficient technical and financial resources to implement water development projects even where there has been an identified need and tangible opportunity. This prevents the agency from providing technical hydrological data to countries where assistance may be needed. Hydrological models and other land use data are often unavailable for countries where the USG may intend to offer development assistance or arbitrate conflict. While USAID and NGOs that are under resourced or new to water development lack these capabilities, substantial technical experience exists within agencies such as NASA, NOAA and USGS, as well as the intelligence community. Tapping this expertise presents a challenge in that doing so affects agency budgets and work force levels by adding new demands on already constrained resources. The “water workforce” has diminished. The knowledge base of the USAID water workforce has been eroded over time as

employees with specialized knowledge have retired, been replaced or shifted to other development priorities. Since U.S. development assistance is mission driven, the lack of technical skills deployed at the host country level provides a serious impediment to developing more robust programs on water resources.

New diplomatic approaches are necessary. Water problems are often subnational or transnational, while traditional diplomacy is undertaken directly with the national government. However, engaging governments exclusively at the national level may not be adequate when that government displays low governance capacity. The USG lacks the optimal mechanisms and institutions to tackle water challenges up and down the various levels of host country governments. For example, effective Integrated Water Resource Management (IWRM) operates on an ecosystem basis that does not usually align with political boundaries of any kind.

Water projects present opportunities for post-conflict reconstruction and stabilization. In conflict itself, a large number of deaths are caused by a lack of access to health care and the spread of disease resulting from a lack of clean water and sanitation. Weak governments recovering from conflict situations may also have trouble providing these services. When governments are unable to provide adequate infrastructure, they lose legitimacy. In some cases, subnational organizations prone to radicalization provide public services in place of weak governments. U.S. water assistance could help national governments stabilize and regain their legitimacy.

Academia can play a positive role by engaging policy-relevant and technical research. In 2012, USAID offered \$100 million to U.S. universities to develop a network of centers to study foreign aid and generate solutions to key problems facing the developing world, including water. USAID is interested in PPPs and multidisciplinary approaches to issues such as water conservation and disease prevention that form broad coalitions including companies, NGOs and higher educational institutions.²⁷

Recommendations

The purpose of the workshop was to identify ways in which water could be utilized as a positive influence in all aspects of U.S. foreign affairs. The deliberations of the workshop, the preceding findings and subsequent editorial input from some of the workshop participants lead us to offer the following recommendations. ***While these recommendations follow from the conversation they do not necessarily reflect the views of any individual participants.*** We believe that discussion of some of these issues is just beginning and we intend to advance that discussion.

Recommendations for the Whole of Government

- Congress and the Administration should give greater priority to water issues as an integral component of U.S. foreign policy.
- The President should establish a Senior Director position for water issues at the National Security Council.
- Water-related agencies should increase staffing and budgets for water initiatives and continue to improve communication around water programming within and between those agencies.
- Water-related agencies should enhance the feasibility of inter-agency coordination and personnel exchanges as a means of boosting technical expertise in diplomatic, development and defense agencies.

Recommendations for Development Agencies and Organizations

- USAID should significantly expand water teams both at headquarters and in the field.
- USAID should leverage technical capabilities within specialized agencies such as NASA, NOAA and USGS to provide hydrological data for potential water programs that will facilitate better decisions by host governments.
- Water programs should be focused toward first-time access for safe water in countries and communities of greatest need, as envisioned by the *Water for the Poor Act of 2005*.
- The USG should establish stronger PPPs (a topic of the next section) and relationships with other American organizations, including universities and organizations focusing on credit risk guarantees and other financial innovations. This approach will reach more people and give the USG a greater multiplier effect for its limited resources.
- The World Bank should make another 20 year financial commitment to the Nile Basin Initiative and identify additional long-term opportunities to strengthen institutional capacity in transboundary water basins.

Recommendations for the Diplomatic Community

- The Department of State should create regional “Water Desk Officers” at headquarters, perhaps organized around sensitive river basins. In the field, permanent staff should be distributed through the existing departmental system of environmental hubs.
- The Department of State should better leverage its interagency reach and convening power to centralize data-sharing with recipient nations, thereby making the exercise of “soft” power more effective.
- The Department of State should broaden the focus of its diplomacy by increasing engagement and cooperation on water issues with regional organizations such as the NBI.

Recommendations for the Defense Community

- Through the OSD, the DoD should offer strategic guidance on water issues, enabling the Armed Services to operationalize water into military service strategies at a regional level and COCOM theater campaign plans.
- DoD should leverage relationships with partners, particularly from the NGO and business communities, in order to more effectively engage in water projects and to respond to contingencies such as humanitarian operations driven by water shortages.
- National Guard members’ technical experience with water projects should be deployed more effectively, particularly at a time when the United States is reducing the overseas presence of its regular forces.
- While the military has a strong role to play in water projects that provide stabilization and humanitarian assistance and in COIN operations, the militarization of development assistance should be avoided.

Conclusion

This workshop provided the opportunity for participants to discuss the role of water both vertically, within their own organizations, and horizontally across the three dimensions of U.S. foreign policy. The workshop recognized that coordination with other government agencies and stakeholders would increase the effectiveness of water assistance in most cases. The discussions indicated that water will rarely be the exclusive focus of any one of the three dimensions of U.S. foreign policy. However, participants proposed that foreign policy practitioners at least consider water in a much wider array of plans and conversations, as a powerful “tool” in the U.S. foreign policy toolbox.

This one-day workshop provided an appropriate but limited forum for discussing water across the three dimensions of U.S. foreign policy. As organizations outside of the USG, the co-sponsors planned to convene future workshops that would bring additional government stakeholders into the water and foreign policy conversation.

Part II Water, U.S. Foreign Policy and American Leadership: “A Whole of U.S.” Approach

Strategy for “A Whole of U.S.” Approach

The first section of this report addressed ways to actualize a “whole of government” response to elevate water security into the three dimensions of U.S. foreign policy: development, diplomacy and defense. On February 21, 2013, we held a second conference at the Elliott School of International Affairs on *Water, U.S. Foreign Policy and American Leadership*. The workshop, sponsored by the Elliott School of International Affairs, Skoll Global Threats Fund, WASH Advocates and the U.S. Water Partnership, brought together leaders from the government, corporate, philanthropic, non-governmental, faith and academic sectors. The workshop was convened out of a realization that while USG action and a coherent foreign policy framework is essential, there is a much larger community that can contribute to a “whole of U.S.” strategy. Effectively leveraging this community can empower the American leadership to address global water challenges in a way that the global community expects of us, while avoiding the worst outcomes foreseen in the ICA and described in part one of this report.

Irrespective of other policies toward the United States, both developed and developing states will look for US support of international agreements, and institutions and national and subnational partners, seeking to improve water management. Active engagement by the United States to resolve water challenges will improve US influence and may forestall other actors achieving the same influence at US expense. (ICA, 2012)

The workshop was convened to promote a better understanding of each party’s interests, expertise, and strengths and weaknesses in global water aid, and explore new strategies and tactics leading toward partnerships that leverage, accelerate and expand new and existing efforts to provide global water assistance. The session emphasized PPP opportunities and related solutions where scale might be enlarged or accelerated. Outcomes included informal steps, commitments and guiding principles for participating organizations to contribute to American leadership in the global water community.

The session utilized a roundtable format without formal panels but organized into three themes: *U.S. Leadership Opportunities in Global Water Security*; *Public-Private Partnerships and Water*; and *Market-Driven Approaches to Solving Water Challenges*.

The participants were asked to consider three questions:

- 1.) What are the unique capabilities of your organizations toward solving water challenges?
- 2.) What can each of us and our organizations do to make water one of the keystone elements of U.S. foreign policy and private sector leadership?
- 3.) What does your organization need from others in the public or private sector to achieve these goals?

The participants' answers provided bases for discussions in future forums and resulted in actionable recommendations.

Setting the Scene, Vectors for Change

The framing remarks for the second session were delivered by a senior administration foreign policy official. They identified four pathways or vectors for a broad range of U.S. organizations to play a more active role in promoting global water security.

Science and technology: The U.S. has the opportunity to build upon its advanced science and technology capabilities by sharing data and methodologies that increase the planning capacities of U.S. and partner nations' organizations.

Diplomatic engagement: The 2012 ICA makes it clear that those countries with better access to clean and safe water will be more stable over the next ten years and beyond. Therefore the importance of keeping water on the diplomatic "soft" power agenda is a priority under tight fiscal constraints. Federal budget cuts in foreign assistance create the context for coordination with new stakeholders, increasing these partnerships.

Creative project financing: Interested parties should explore risk-sharing mechanisms, such as USAID's Development Credit Authority, microfinancing and co-investments by U.S. corporations, NGOs and philanthropies in water-poor nations' local water infrastructure.

Leverage current market opportunities: There is a high potential upside for U.S. firms to provide services in areas such as storm water management and natural disaster response. There is also a high demand for innovative technologies in desalination and irrigation. U.S. firms can do well by doing good.

The introductory remarks concluded that water is a particularly vexing foreign policy challenge due to the complex web of interdependencies it creates. The United States should endorse a global dialogue on the promotion of food security, resilience and development of large infrastructure, recognizing that water is at the nexus of these efforts.

Session 1: U.S. Leadership Opportunities in Global Water Security

This panel session was premised on the idea that organizations that were not traditional national security actors such as philanthropies and corporations could cooperatively implement measures that diminish the security risks illustrated by the findings of the ICA. This task has traditionally been the providence of national governments and international organizations. The discussion emphasized human security – or the individual freedom from want and fear – over traditional “state centered” approaches to national security.²⁸

The participants concluded that organizations that wish to contribute to an integrated strategic water security framework should carefully consider the following needs and concepts.

Findings

There is a need to bridge a large gap between perception and reality in water. The complete story of water is not well understood by the public. It is broadly known as the planet’s life sustaining force, but the reality is that it is the common denominator for many goals and challenges we face today. The situation is further complicated by the fact that water practitioners themselves often have divergent views about the basis of security risks. Some define water security essentially as the avoidance of conflicts over water scarcity and sharing watercourses, often at the national level. Others are focused on the human security goal of meeting basic needs for water, sanitation and hygiene (WASH). Ideally, these perspectives are complementary. Indeed, WASH issues are the tip of the spear of a comprehensive strategy toward implementation of successful water strategies at the country level.

Water is a common denominator in major global challenges. Water is essential to successful outcomes in the areas of human health, food and energy production. Growing water scarcity is prompting difficult trade-offs such as those between guaranteeing access to safe and secure water supplies and fulfilling energy needs. Water is necessary for hydroelectric power generation, cooling all types of power plants and extracting natural gas. This problem is especially vivid in Southeast Asia, where hydropower dams on the Mekong River Delta system in China, Cambodia, Thailand, and Vietnam will affect the quantity and quality of water available for other uses.²⁹

Philanthropic institutions play an important role in water security. U.S.-based foundations can play vital roles in the water security arena by targeting programs that contribute to peace and security. Foundations provide more financial assistance to water projects than national development agencies. They are also influential in other ways, including through their contribution to the dialogue. The Skoll Global Threats Fund sponsored a High-Level Dialogue on Water Security to coincide with the 2012 opening session of the UN General Assembly. The conclusions of this dialogue were documented in an analytical paper that clarified the definition of water security with the objective of making it easier for NGOs and others to operationalize aid projects.

Water diplomacy is a sensitive activity. The USG often plays a quiet role in facilitating regional water security discussions. This role should remain understated, given the sometimes sensitive political and diplomatic considerations involved. Sharing hydrological data can pose a related challenge by informing negotiation outcomes that are politically unacceptable to important allies.

Gender is an important consideration in every phase of a project. Women should be a central focus of water assistance, especially because they are often the primary household providers. In the developing world, women and children can be subject to harm and missed opportunities to attend school when they retrieve water from distant sources. It is important that U.S. water aid programs are designed to address this reality.

Projects can build stability through facilitating better governance. Development assistance can contribute to international security by strengthening the capacity of host countries to govern. Improvements in basic infrastructure build government legitimacy. Well-targeted USG investments in governance can increase national stability while forming a solid foundation for subsequent private sector investment.

The foreign policy community has limited capacity for science-based policy decision-making. As the first workshop concluded, USG agencies responsible for setting policy and priorities in water assistance often lack personnel, such as engineers, who hold specialized technical expertise. Personnel and capabilities resident in science and technology agencies such as NASA, NOAA and its component National Weather Service, the USGS and the intelligence community should be leveraged to identify, design and deliver more effective projects.

Summary

Although the effort to provide better water aid is complicated, three approaches will make great progress toward enabling the U.S. government to provide critical leadership in global water security. An inclusive understanding of water security concepts and the breadth of water's impacts on various sectors, including health, food and energy, will inform better aid strategies. A greater understanding of political and gender sensitivities in specific countries will enable more effective project implementation. Greater dedication to strengthening the capacity of host governments through approaches such as data sharing will increase the prospects of project sustainability.

Session 2: Public-Private Partnerships and Water

This session was framed by the participants' recognition that national governments can't address the challenges of water security alone. The multiple organizations that provide basic water, sanitation and hygiene in poor countries have several simultaneous objectives including: achieving viable financial returns, strengthening institutional development and maintaining broad political and public support. In many cases, PPPs are a logical response to these objectives.

PPPs follow diverse practices, but they generally involve businesses and non-profit civil society organizations working with governments or multilateral development institutions. They are generally characterized by: reciprocal obligations and accountability measures; voluntary or contractual relationships; the sharing of investment, political and reputational risks; and joint responsibility for project design and execution.³⁰

One of the advantages of PPPs is that they are less likely to be constrained by the hierarchy and bureaucratic nature of government and international organizational donors. As a result, they can leverage funding more nimbly than their members working on their own.

PPPs are becoming a more popular vehicle for delivering water assistance. Recognizing this trend, the workshop explored ways to enable more successful PPPs through approaches such as market-based mechanisms.

International H2O Collaboration

The International H2O Collaboration is an example of a successful PPP with a service organization. The worldwide alliance of Rotary International/The Rotary Foundation and USAID is dedicated to implementing long-term, sustainable WASH programs in developing countries. This collaboration merges Rotary's Grassroots strength with USAID technical expertise. Rotary International is composed of 33,000 clubs in more than 200 countries.

The program is designed so that each organization is committed to contributing half of the funding for each project with an estimated total of at least two million dollars per project. International H2O Collaboration uses a three pillar approach to support sustainable access to improved water and sanitation: access to appropriate hardware; behavior changes and hygiene promotion and creation of an enabling environment.

The alliance is initially developing projects in three countries: the Dominican Republic, Ghana, and the Philippines. These countries were selected based on need and the capabilities of local Rotary and USAID missions. The alliance is considering expanding to other countries. One unique feature of this collaboration is that Rotarians can apply for individual grants to help carry out this work.

Findings

The session identified modalities for successful PPPs throughout the project lifecycle. The following considerations are important at the project initiation phase:

Project implementers may lack knowledge of the latest technologies. A monitoring and evaluation organization, most likely situated in the private sector, could act as a clearinghouse for new water technologies relevant to private investors, thereby ensuring the long-term sustainability of projects that were initiated on a public-private basis. Fluctuating federal budgets may hinder the USG's capacity to fulfill this function.

Water data can be scattered and not user friendly. There are a myriad of websites and other sources for water-related data. This data is scattered across disparate agencies and NGOs. A portal for integrating and disseminating U.S.-sourced information to project implementers and end users would be beneficial in several ways:

- Parties, particularly the USG, can provide the detailed political, social, and economic analysis essential to operate in specific countries. Most private sector partners do not collect this information, but it is necessary to inform shareholder decisions and manage supply chain risk.
- This system will facilitate transparency in data, tools, resources, processes and financial flows that facilitate informed decision-making for aid allocation and ensure successful stakeholder “buy in” during a project's lifetime. While this information should be presented in a user-friendly way, some capacity building may be necessary to enable partner countries to interpret and use this data.
- Private sector corporations can provide information including updates on new technologies to implementers and organizations in host countries.

Government agencies can provide valuable kick-start funding. In the pre-project phase, government agencies can provide valuable assistance, such as seed money, to basic technology developers to help these entrepreneurs cross the investment “Valley of Death,” generally characterized as the gap between basic research and successful establishment of a market for the product. For example, DoD has served as an early test market for the use of advanced biofuels in ships and aircraft.

All parties should establish a clear set of principles at the project initiation phase. Developers must answer questions concerning the profitability timeline for implementation or geographic scope of the project “up front.” This will manage expectations and avoid misunderstanding between and among co-donors, implementers and local communities in subsequent phases of a project.

Collaboration is the most effective approach to water aid. There are two kinds of PPPs – transactional and collaborative. Collaborative partnerships are strongly preferred. Rather than simply donating money, collaborative projects are co-funded with host governments. Collaboration creates challenges and complexities but its value is inherent, not just in financial terms, but in the skills they build and bring together.

Local capital is a vital component for new projects. Water project implementers must identify creative ways to finance and sustain their initiatives, in a strained global financial environment. Building local partnerships by encouraging capital investment at the community level is a key approach toward obtaining sufficient initial project finance.

Sustained engagement is critical throughout an individual project's lifecycle. The following recommendations apply to the ongoing and terminal phases of the water aid projects.

Water and Development Alliance (WADA)

USAID and the Coca Cola Company founded the Water and Development Alliance (WADA), an effective global PPP. Launched in 2005, WADA has invested over \$31 million in a variety of water supply and sanitation projects in 24 countries. In each WADA project, these organizations work with local NGOs to determine how each participant's capabilities align with local needs. In coordination with local missions, USAID may take the lead in planning while Coca Cola might use its media strength to publicize projects. In many cases, both organizations contribute funding. Rather than donating equipment alone, WADA's model facilitates policy and behavior change in areas such as WASH and watershed management.

Project implementers should take specific steps to ensure project sustainability. Ideas, vision and willpower are necessary but not sufficient attributes of successful water projects. Sustainability is vital at the local level if and when external funding dries up. Sustainability is achieved through local ownership, stable supply chain of material to maintain the projects, good communication with the recipients, and financially viable business plans. While sustainable projects help companies attain their strategic corporate social responsibility (CSR) goals, it is also important for corporations to promote basic sustainability practices such as WASH into their in-country operations and facilities.

Project implementers should have compatible targets and timetables. Implementers' incentives for participation and time horizons for expected results should be in alignment. For example, a corporation may have deadlines for reporting results to its board of directors, whereas government agencies may be subject to timetables established by legislative appropriators.

Inadequate reporting of successful outcomes jeopardizes future investment. To ensure sustainability and attract private capital, a project that may have started as a PPP should have rigorous quantitative and qualitative monitoring, data collection, and reporting systems using agreed upon protocols. USAID incorporated this recommendation onboard into its 2013 *Water Development Strategy*.

Implementers should share credit for success. Implementing partners also often have different expectations for publicity. Project sustainability sometimes dictates that the lion's share of credit should be deflected to other project partners or host governments or in some cases, the donor should remain anonymous.

“There is a need for a ‘flagnostic approach’: The desires of government, businesses, and NGOs to brand their projects should not take precedence over the common good.” – Workshop participant

Finally, PPPs can be maximized by taking a “whole of U.S.” response that includes new approaches and contributions from nontraditional actors:

Corporate strategic planning capabilities can leverage other organizations capabilities. The corporate sector plays a catalytic role that brings unique skills and business knowledge to the table, benefiting others organizations such as the USG and NGOs. Development organizations agencies are frequently looking for guidance on specific strategies and business plans, not just the identification of geographic areas in need of water assistance or point source solutions.

The faith-based community is an important partner in project identification and implementation. The broad water community should recognize the benefits of partnering with the faith-based sector, which is already heavily engaged in water assistance. Many faith-based organizations already have hierarchical networks in place in host countries that can be leveraged to support water initiatives. Faith-based networks can identify needs, target aid opportunities, deliver information and socialize best practices. The White House Office of Faith-Based Initiatives has been a focal point for this activity.

The technical skill base for water project developers must be maintained. There is an “upstream” role for universities and academic funding agencies such as the National Science Foundation. However, universities have been most effective in conducting applied research on innovative technologies in areas such as water conservation. A renewed focus by many institutions on a Science, Technology, Engineering, and Mathematics (STEM) curriculum provides vital technical training for tomorrow’s water decision makers.

Summary

The workshop highlighted the importance of PPPs as an emerging and effective tool that creates a multiplier effect, elevating the role of water in U.S. foreign policy while drawing on the individual strengths of participating organizations. The workshop identified ways to make existing relationships more productive and, perhaps more significantly, introduced new organizations into the equation. All indications are that in the short run, PPPs will become more necessary and relevant as federal agencies traditionally involved in water aid assistance are faced with smaller budgets.

Session 3: Market Driven Approaches to Solving Water Challenges

The ICA notes that America will be called upon to take the lead in solving global water challenges. The private sector has an outstanding opportunity to play a greater role in this strategy. This session posed the question of how the private sector can implement market-driven approaches to support a larger effort.

When market-driven approaches are built in, aid projects are more likely to achieve financial independence in the long-run. One workshop participant observed that “sustainability happens where development meets capitalism.” However, one challenge that the implementing community must remain cognizant of is that inhabitants of developing countries who live in extreme poverty may not be able to fully participate in the market.

Therefore, financial mechanisms, such as the USAID Development Credit Authority detailed in the recent *U.S. Water and Development Strategy (2013-2018)*, are an important way to encourage participation in the market. The Development Credit Authority uses partial credit guarantees to mobilize local financing to encourage private lenders to extend financing to underserved borrowers.³ The program has made over \$2.3 billion available since its inception.³¹ Financial risk can also be managed by applying improved accountability measures and metrics to projects. One private sector participant in the workshop observed the importance of building sustainable capital markets in the short term, since factors such as climate change and population growth will only worsen the prevalent conditions for market entry in many developing countries.



Benthometer Being Used to Establish Water Quality

Photo courtesy of WWF-Coca Cola partnership.

The work of the WWF Conservation Partnership enables significant positive work to be done on the ground in developing nations over water and other issues. (Image located at <http://www.coca-colacompany.com/press-center/image-library/benthometer-being-used-to-establish-water-quality>)

³ US Water and Development Strategy 2013-2018 available at <http://www.usaid.gov/documents/1865/usaid-water-and-development-strategy-2013-2018>

Findings

The speakers, who hailed from the public, private, non-profit and philanthropic sectors, identified the following considerations as highly desirable elements of effective market-based approaches.

It is important to consider local market conditions. Just like in other business ventures, successful implementers adjust marketing strategies to consumer preferences. These may be based on cultural norms, gender, or other factors. Social marketing approaches, such as the use of cellphone-based technology to disseminate information in developing countries and novel market positioning statements, must be used to reach water aid recipients including the rural poor and women and girls.

Strategic planning is an important factor toward ensuring sustainable projects. To establish effective markets, private sector investors need integrated strategic guidance, including political risk analysis, to develop sustainable water strategies, not just point-source solutions. Many organizations can contribute guidance to the private sector. USAID could dedicate more resources to provide technical assistance and advice to the business sector on best practices and sustainability, much as it does with the NGO community. Other government organizations could provide country specific political-risk information.

Water pricing mechanisms can improve conditions for investment. Payment for Ecosystem Services (PES) or user fees is one way to establish a price for water. Mobilizing capital support from recipient governments or local communities will assure “buy-in,” and possibly build and sustain new product markets for corporations. Downstream user fees support the upstream sustainability of projects by making them more attractive to investors who can then enjoy a greater rate of return on their investments.

Technology certification programs can boost investor confidence. Private sector investors must have confidence in the technologies they invest in but they may lack the technical expertise to assess them. There is a role for public sector technical agencies to apply their tools and capabilities to inform investment risk.

Philanthropy without a suitability plan can lead to dependency. Philanthropic institutions play an essential and growing role in providing water assistance. However, there is a potential downside to philanthropic grant-making when the funding is provided for startup phases but there is no plan for sustaining the entire project. Project implementers’ dependence on these funds can prevent them from developing financially sustainable business models for their projects that will eventually be necessary in most situations.

Summary

Market-based solutions that combine technological capability with supply chain access for investors can attract critical capital and sustain water projects. These approaches complement existing capacity for water aid delivery through national development organizations, international organizations and other donors. Market-based solutions can create sustainable projects that encourage local participation where continued financial support is uncertain.

Making sanitation profitable

2.5 billion people worldwide and 8 million people in Kenyan slums lack access to adequate sanitation. The innovative startup company, Sanergy, sensed a human rights crisis and business opportunity. With grants of \$100,000 from The Massachusetts Institute of Technology's Business Plan Competition and \$100,000 from USAID, Sanergy began to build portable pit latrines. Franchising them to local entrepreneurs, they collect the waste and convert it into energy and fertilizer, all while supplying a much needed social service in Kenyan slums. Their sustainable business model provides basic sanitation, creates jobs, produces a product and turns a profit at every step in the process.

Recommendations

*These recommendations follow logically from the workshop conversation. **They do not necessarily reflect the views of any individual participant.***

For the Whole of Government:

- Elevate and institutionalize water's role in foreign policy across the government – including recruiting more employees with technical expertise – and align this expertise to support USAID projects. Direct regional and technical expertise toward private sector investors.
- Establish joint funding opportunities through more funding to PPPs in this strained global and national fiscal environment. Seek to obtain additional leverage through investing in ongoing corporate projects.
- Re-establish technology assistance centers such as those that were located at the EPA under the authorization of the *1996 Safe Drinking Water Act*. These centers could certify new clean water technologies developed by small entrepreneurs at no or little cost.
- Employ the talent resident in the U.S. Army Reserves. Many of its 200,000 members have civil affairs experience. Reserve members with these capabilities can be deployed in larger numbers as conventional forces are drawn down in Afghanistan and Iraq.
- Provide data to U.S. private sector investors. Agencies such as the U.S. Navy, U.S. Army Corps of Engineers and the National Geospatial Intelligence Agency should share de-classified environmental and political risk data with civil society organizations. There is precedent for such cooperation around Arctic environmental issues.

For Development Agencies and Philanthropic Organizations:

- Establish systemic success metrics and evaluation standards. Water projects must be rigorous in monitoring and data collection so that private sector investors and other organizations can measure the impact of their investments. Clear results draw private capital.
- Co-fund more water projects to expand limited resources and establish a strong working relationship between partners. Recognize that local buy-in, project involvement and funding support from all stakeholders in the community, including women, are crucial to sustainability.

For the Private Sector:

- Focus on creating market-based community-supported solutions as an integral part of CSR strategies, rather than donating only equipment or money. Mobilizing capital support from recipient governments and communities through user fees or payment for ecosystem services will build and sustain markets for new products and establish new trading partnerships.
- Think strategically about capacity building when developing PPPs. Provide local leaders with business expertise, communications structures and supply chain access.

For Universities:

- Continue to develop interdisciplinary and multidisciplinary approaches to applied research and understanding of water security. Encourage students to pursue STEM-related curricula.
- Establish policy-relevant research and policy training programs that provide tomorrow's government leaders with a greater capacity to understand water issues.

For All Parties:

- Clarify the definition of water security applied in various contexts. Suffering and instability can arise from distinct factors including water scarcity, lack of access to basic sanitation or disputes over rights to watercourses. This step is critical because the definition of water security affects the avenues through which the problem can be resolved.⁴
- Take action to better understand the U.S. data landscape; work together to develop and fund a new water “portal” that provides a framework for consolidating, integrating and disseminating socioeconomic and geophysical data and tools generated by the U.S. government and international organizations. Make this data free and user-friendly for developing country users as well as NGOs and U.S. private sector investors. The platform itself could also provide an on-line environment for collaboration. The U.S. Water Partnership is implementing a plan to develop this platform.

⁴ UN Water published an excellent analytical brief on this topic that is accessible at http://www.unwater.org/downloads/watersecurity_analyticalbrief.pdf

Conclusion

The United States is in a unique position to address the urgent challenge of global water security. The animating principle of our workshops was to bring together constituencies – often for the first time – to discuss how to avoid the stark prospects of near-term instability driven by water scarcity and low water quality. Factors such as climate change and rapid population growth increase the urgency of the issue. What became clear in the discussions is that all participating organizations have specific capabilities that they can bring to the table, and that politics favors action.

While the specific findings and recommendations varied according to the organizations at the table in each session, two strong common themes emerged. The first was the importance of developing new approaches or vectors for change, such as market-driven mechanisms and PPPs that are as inclusive as possible and especially relevant at a time when USG financial resources are constrained. The second is the importance of engaging the technical capacities resident in a raft of USG agencies and some private sector organizations to provide data to water project implementers and host governments. Both sessions identified specific potential contributions from groups that have been less recognized in the broader water community, including faith-based organizations, philanthropic institutions and military organizations such as the U.S. National Guard and U.S. Army Reserve.

Most of all, these sessions highlighted the upside of water challenges. The findings and recommendations illuminate paths toward comprehensive national leadership in global water security that bring to bear all of the nation's capabilities. This encompasses an array of diverse actors across the political spectrum, from each individual to the largest multinational corporations and multilateral agencies, all of whom are capable of facilitating rapid and positive change. All of the organizations represented at the workshop have the opportunity to actualize the upside of water and pursue the common good, while strengthening America's unique global brand as an international leader and innovator. Above all, politics stops at water. Systematically addressing global water challenges is an important and politically feasible foundation for a renewed American foreign policy that foregrounds the needs of future generations and human dignity. The United States is the world's leader in providing water security and will be expected to continue and increase that role. This can be best achieved by a "whole of U.S." approach that incorporates new stakeholders into all three dimensions of foreign policy: development, diplomacy and defense.

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