TESTIMONY OF

DR. AARON SALZBERG, SPECIAL COORDINATOR FOR WATER RESOURCES, BUREAU OF OCEANS AND INTERNATIONAL ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

BEFORE THE FOREIGN AFFAIRS SUBCOMMITTEE ON AFRICA, GLOBAL HEALTH, GLOBAL HUMAN RIGHTS, AND INTERNATIONAL ORGANIZATIONS HOUSE OF REPRESENTATIVES

ON AUGUST 1, 2013 CONCERNING

"THE IMPACT OF GLOBAL WATER PROGRAMS ON HEALTH"

Chairman Smith, Representative Bass and other Members of the House Foreign Affairs Subcommittee on Africa, Global Health, Global Human Rights, and International Organizations, I appreciate the opportunity to appear before you today to discuss the growing water and sanitation challenges in Africa and globally.

The Global Water Challenge

Perhaps no two issues are more important to economic development, environmental well-being, and human security than water and sanitation. Yet today, nearly 800 million people lack access to an improved drinking water source (it is likely that 2-3 times this number lack access to water considered safe to drink) and more than 1.5 billion people still lack access to improved sanitation facilities. Each year, more than four billion cases of diarrhea cause 2.2 million deaths—most are in children under the age of five. While globally, we have met the Millennium Development Goal (MDG) on drinking water (to reduce by half the proportion of people unable to reach or afford safe drinking water by 2015) many individual countries remain off track and it is likely that we will fail to reach the goal on sanitation (to reduce by half the proportion of people without access to an improved source of sanitation). In addition to the lives lost, the total economic losses associated with inadequate water supply and sanitation is estimated at more than $250 billion annually.

Women and children are disproportionately impacted by these issues. Women and girls often bear the primary responsibility for meeting the water needs of the family. In some areas, collecting water consumes up to five hours per day and involves walking more than two miles carrying over 40 pounds of water. It is estimated that across Sub-Saharan Africa women spend some 40 billion hours a year collecting water – an exercise that is not without its risks. Collecting water can often involve walking through isolated, unsafe areas that expose women and girls to health and safety risks. The burden of tending to family members sickened by water-borne diseases falls primarily on women and girls, who are also more likely to stop attending school when appropriate sanitation facilities are not available.

The challenges of water extend beyond health. More than 70 percent of the water used globally goes towards agriculture; in some developing countries, it's over 90 percent. As demand increases and as consumers increasingly buy foodstuffs that require more water – such as beef – and the impacts of climate change become more severe, already scarce water resources will be under greater pressure. Many agrarian-based economies in the developing world are rain-fed: when it rains, lands produce and economies can grow; when it does not, countries that lack the capacity to store and save water face economic decline and food insecurity, even famine. To expand food production we will need to improve the productivity of water (our ability to get more "crop per drop"), shift away from water intensive crops, understand projected climate change impacts, and better manage surface and groundwater supplies to ensure sustainable and reliable access. This means expanded irrigated agriculture, using new technologies to get the right amount of water to the right place at the right time (such as drip irrigation), and an increase in the use of natural and man-made systems to store and manage supplies. We will also need to protect our freshwater and coastal ecosystems. Fish is a significant source of protein for more than two and a half billion people in the developing countries. Overfishing, pollution (including agricultural run-off) and poor management have led to a decline in many freshwater fish populations and a reduction in freshwater fish species.

Water will also play a key role in achieving energy security. Water is heavy and often needs to be moved from where it is found to where it is used – this takes energy. In some countries, it is the limited access to energy that drives poor water practices. When energy supplies are sporadic and unpredictable, farmers are likely to pump as much water as they can when they can, often flooding their fields – wasting water and increasing salinization of arable lands. We have seen some striking examples of this water-energy connection in India. Poor monsoon rains in 2012, forced farmers to pump more groundwater – increasing energy consumption. The same lack of rainfall reduced river flows decreasing hydropower production. Combined, these threatened the energy security of more than 600 million people.

At the same time, water can be a source of clean, renewable, energy. In many regions of the world there is significant untapped hydropower potential. Dams can play a key role in meeting future energy needs and along with natural infrastructure can be critical to managing and mitigating the impacts of floods and droughts. These, however, are not decisions to be taken lightly. While hydropower is a mature technology, dams can have profound and often irreversible impacts on people and the environment. Sound science and deliberative decision-making that includes all stakeholders are essential to ensuring the long-term interests of people and the environment are protected. We also need to be sensitive to the effects of new energy development on existing water resources.

Many natural disasters have a water connection. Floods, droughts, famine, and water-related epidemics account for over 90 percent of water-related natural disasters world-wide – often with profound humanitarian and economic consequences. Sound water resources planning and management, multi-purpose infrastructure (e.g., dams that both produce power and offer flood protection), better management of natural systems (e.g., flood plains), improved hydrometeorological monitoring and prediction and early warning systems, and understanding the projected impacts of climate change can help people prepare and mitigate the impacts of many water-related disasters, now and in the future.

Water issues may also become an increasing threat to peace and security. In late 2011, in response to a request from the Secretary of State, the National Intelligence Council completed a National Intelligence Estimate followed by an unclassified Intelligence Community Assessment on Global Water Security and its implications for U.S. national security. The report concluded that, "…during the next ten years, many countries important to the United States will experience water problems – shortages, poor water quality, or floods – that will risk instability and state failure, increase tensions, and distract them from working with the United States on important policy objectives."

Climate change will exacerbate many of these challenges. Some regions will get wetter; others drier; glaciers will recede; snow-packs may decline (reducing natural water storage for many regions of the world) and sea levels will rise. Greater variability in rainfall will increase the likelihood of floods and droughts. Rising sea levels, storm surges, flood damage, and saltwater intrusion will threaten freshwater supplies. Extreme weather (floods and droughts) is likely to increase - threatening both people and economies. Greater water run-off from more frequent and more intense precipitation events is likely to carry more pollutants into water systems. All these will put increased pressure on managing water holistically across a broad range of competing needs.

The Water Challenge in Africa

The situation in Africa is particularly challenging. Most of Africa is not on track to reach drinking water and sanitation MDG. In 20 African countries, more than 30 percent of the population does not have access to safe water. In seven of those countries, more than 50 percent of the people lack access to safe water. Not only is progress slow, in some African countries the proportion of people with access to safe water and sanitation is actually decreasing. There are 33 African countries where more than 50percent of the population lacks access to sanitation. More than half of all child deaths from diarrhea are in Africa. Water and sanitation in schools is also critical problem – in some areas more than 150 children must share one latrine. To meet the MDGs in Sub-Saharan Africa, more than 21 million people a year will need to gain access to an improved water source; over 26 million per year will need to gain access to basic sanitation.

There are a number of challenges to overcome in addressing the water and sanitation issues in Africa. While the proportion of people who lack access is significantly higher in rural populations, urbanization is increasing rapidly (nearly 4 percent per year) and there is greater pressure on larger-scale municipal services. In Sub-Saharan Africa, as a result of population growth and increasing urbanization, the percentage of urban population receiving water piped onto their premises actually declined between 1990 and 2012. Progress is hampered by weak governance and areas of instability. The region also suffers from extreme climate variability – improved planning, basin-wide management, and large-scale infrastructure and water storage will be critical to meeting long-term needs. Recent predictions suggest that long-term climate trends will exacerbate the situation.

Finally, political commitment is low. Many governments in Africa do not prioritize water and sanitation in national development plans and strategies. Fewer still provide budgetary

support for water and sanitation services, and often that support does not find its way to the local service providers. Without national budgeting sustainable progress is difficult.

Making Progress

While the numbers above may be bleak, there have been some gains. By the end of 2011, 89 percent of the world's population received its drinking water from an improved source and 64 percent had access to an improved sanitation facility. In Africa, we are seeing some champions emerge. Countries such as Gambia, Malawi, Namibia, Rwanda, Uganda and others have made access to water and sanitation political priorities and are achieving significant gains in service provision. Uganda has reformed its sector policy to reflect a whole country approach to improving water quality, availability and service delivery.

The Future

By 2025, experts predict that nearly two-thirds of the world's population will be living under water-stressed conditions, including roughly a billion people that will face absolute water scarcity (a level that threatens economic development as well as human health). For those countries that are water scarce, greater attention will have to be paid to reducing demand and better managing supplies through proper pricing, improved water storage, and water reuse. New technologies can help – particularly in the area of agriculture – but there is no single solution and countries will have to make dedicated efforts. In most places, however, there will be enough water to meet demands. What is lacking is a commitment to sound water resources management and to meeting the basic water and sanitation needs of the people.

The U.S. Water Strategy

The overall goal of U.S. efforts on international water issues is to help countries achieve water security. Simply put, this means that people have reliable and sustainable access to the water they need, where they need it, when they need it to meet human, livelihood, ecosystem and production needs while reducing the risks from extreme hydrological events. To achieve this, the United States is working to: increase access to safe drinking water and sanitation; improve water resources management; increase the productivity of water resources; and mitigate tensions associated with shared waters. Water is not viewed as a standalone Administration issue, but rather a key factor that should be integrated throughout U.S. diplomatic and development efforts. These efforts will aid our efforts in achieving the United States' broader goals on health, economic growth, food security, climate change, and peace and security.

To achieve these goals, the United States is working to:

- **Build and strengthen institutional and human capacity at the local, national and regional levels.** Providing adequate and sustainable water supply is a technical challenge, a financial challenge, and often a political challenge. It requires expertise and coordination across sectors (e.g., health, energy, agriculture, industry, environment, transportation, and disaster prevention) and across media (e.g., rainfall, glaciers, snowpack, rivers, lakes, and groundwater). While these are global challenges, the solutions are often local. Countries and communities must take the lead in securing their

own water futures. We need to build capacity at all levels that will better enable communities and countries to understand and respond to water and sanitation challenges. This includes strengthening local and regional cooperative mechanisms for managing shared water resources, such as user groups and river basin organizations.

- **Increase and better coordinate our diplomatic efforts.** Perhaps the greatest impediment we face is the lack of political commitment to action on the ground. We need to continue working with donor countries and multilateral organizations to address critical needs; to encourage developing countries to prioritize water and sanitation in national plans and budgets; and to integrate water into global food security, health, and climate change initiatives. We can also work to encourage cooperation over shared waters, to make the case for cooperation rather than conflict, and to support efforts of riparian countries to work together to address water challenges.

- **Invest in infrastructure and mobilize financial support.** Managing water requires hardware, be it a community tap, a drip irrigation system, a pit latrine, or a wastewater treatment plant. As we build capacity, we need to invest in basic infrastructure to meet needs and better manage water resources. This won't be cheap. That said, with some support, countries can help themselves. In many cases, there is significant capital within developing countries to fund water projects. We need to focus our support on mobilizing those resources by strengthening local capital markets, providing credit enhancements, creating pooled or revolving funds.

- **Promote science and technology.** While there is no one, single technological fix, science and technology can make a huge impact. We need to work harder to incentivize innovation on technologies that can make and impact in the water sector and to share U.S. expertise and knowledge with the rest of the world.

- **Build and sustain partnerships.** We cannot solve this problem on our own. There is a great deal of knowledge and experience that lies within the U.S. technical agencies, the private sector, and the U.S.-based non-profit community. More than whole-of-government, we need a whole-of-America approach and stronger partnerships with the non-governmental community.

A key principle underlying this work is empowering women and girls. In many ways, women, as half the world's population and leaders in water resource management hold the key to developing localized and global solutions to ensure clean water access for all. If you want to reduce demand for water, you teach women, who produce 60-80 percent of food in developing countries, how to store and use water more effectively. If you want to implement a hygiene-education program, teach the women and girls about hand-washing, and the message will permeate the community. If you want to reduce waterborne disease, you give women access to credit and other resources to access safe drinking water and sanitation for themselves and their families. We can see how taking action to further unlock the potential of women now will ensure that water resources are managed effectively into the future.

This year, we took a major step forward in implementing this approach with the launch of USAID's first Water and Development Strategy. The Strategy establishes a roadmap for USAID's foreign assistance programs across the water sector with a specific focus on reducing water and sanitation-related disease and on sustainably increasing food production.

Delivering Results

We are making progress. The United States remains one of the largest international donors on water. Together, the United States Agency for International Development (USAID) and the Millennium Challenge Corporation (MCC) invested over $945 million in fiscal year 2012 for all water sector and sanitation-related activities in developing countries: $722.5 million of this financial assistance went towards improved access to drinking water, sanitation and hygiene activities. We also contributed to UN organizations and multilateral development banks through our annual dues and through special multi-donor trust funds related to water projects. More than twenty U.S. government agencies are also engaged on international water challenges and share their knowledge and expertise. Since 2006, more than 34 million people worldwide have gained improved access to drinking water supplies and more than 16 million have gained access to improved sanitation facilities. (You can find additional details in our June 2013 Report to Congress on the implementation of the Senator Paul Simon Water for the Poor Act (http://www.state.gov/e/oes/water/index.htm).

We are also seeing an increased focus on countries with significant needs. Of the $722.5 million obligated by the United States in FY12 for drinking water, sanitation and hygiene, $198.9 million (~27 percent) went to activities in sub-Saharan Africa. USAID's obligations in Africa for all water-related activities have more than doubled since 2005, and have included projects in 37 African countries. Out of a total of **16** MCC compact countries, **13** have water programs. African countries account for more than 50 percent of MCC's total water-related compacts. In Zambia, for example, the MCC is investing more than $350 million to improve the water, sanitation and drainage sector in the rapidly urbanizing capital city of Lusaka.

U.S. engagement has elevated the priority of water and sanitation issues internationally. The United States was a founding partner of the Sanitation and Water for All (SWA) Alliance – an international effort to build global awareness and commitment to drinking water and sanitation issues and to strengthen the capacity of countries most in need to develop and implement national drinking water and sanitation plans. As a result of SWA's work, many developing and donor countries have made new commitments to address water and sanitation challenges. We are now supporting a similar exercise on water and food, the Agriculture Water Program in Africa, which is working with the Comprehensive African Agriculture Development Program (CAADP) to strengthen the way in which water is addressed in national food security strategies. The United States has been a driving force behind the focus on water by the G8 and in the founding and development of UN Water.

U.S. support has played a key role in shaping the way in which the international community approaches water and sanitation challenges. The United States was a strong advocate behind the acceptance and expansion of point-of-use approaches to ensuring the safety

of water at the household level; in developing guidelines for Water Safety Plans (risk-based vulnerability assessments of water supply systems, from the catchment to the consumer, to guide water and sanitation related investments to maximize health benefits); understanding, at a country level, the economic costs of water and sanitation challenges; in developing the Strategic Plan for the African Ministers' Council on Water; and, more recently, to develop global indicators for measuring progress on hygiene.

Last year, we launched the Nexus Dialogue on Water Infrastructure with the International Union for the Conservation of Nature and the International Water Association. The goal is to change the way in which the global community manages physical and natural infrastructure for greater economic, social and environmental benefits and to improve food and energy security. Regional dialogues are happening in Nairobi, Bogota and Bangkok and a rich collection of best-practices and lessons learned being developed that can help guide future water-related infrastructure development.

We have been particularly concerned in recent years that water may become a source of tension in regions important to the United States. These are not easy problems to solve. Often there are legitimate competing interests – both within and across borders. Data are poor and "myths" are more common than facts. Many countries view water as a sovereign issue and discourage outside intervention. Transborder water issues are often viewed through a national security lens and embedded within a much broader set of economic, social and geopolitical issues. In some cases water, rivers, lakes and ecosystems are closely tied into a sense of national identity and development of these resources is seen as a sovereign right.

Responding to these challenges requires patience, flexibility, and closely-coordinated development and diplomatic support. Institutionalizing mechanisms for cooperation over shared water (e.g., establishing a river basin commission) can take years if not decades. Initial steps are often focused on building an atmosphere of trust and cooperation while developing a common understanding of the challenges and opportunities for coordinated/cooperative management- in other words, building the political will and incentivizing cooperation. Opportunities are often tied to personalities – the right minister or head-of-state, elections, regional affairs – might open or close doors for progress. Donors must work together and maintain the flexibility to respond when opportunities arise. Public diplomacy can play an important role by raising public awareness and "making-the-case" for cooperation.

With this in mind, we launched the Shared Waters Partnership in 2010. The partnership serves as a multi-donor platform for supporting political dialogue in countries or regions where water is, or may become, a source of tension. We have used this mechanism to support regional discussions on the Nile and Mekong and are currently developing programs in several other regions. We have used similar programs to advance cooperation in several other basins throughout the world including the Niger, Okavango, Sava, Araks/Kura, Amu Darya/Syr Darya, Jordan, and the Tigris/Euphrates. These are modest investments focused on creating the enabling environment (i.e., building the political will) for cooperation. Once the countries come together, then we can often bring support through more traditional mechanisms like the World Bank or Global Environment Facility.

We do none of this alone. We work closely with an interagency water team that includes representatives from almost every U.S. government agency and department that works on water including USAID, MCC, Department of Energy, Environmental Protection Agency, National Aeronautics and Space Agency, U.S. Bureau of Reclamation, U.S. Geological Survey, The U.S. Army Corps of Engineers, and National Science Foundation. These agencies provide the technical knowledge that drives our approach to water and support our efforts throughout the world. What we hear most often from countries is not "give us your money," but "show us how you solved your problems, send us to a training course offered by the Bureau of Reclamation or introduce us to the USDA". Ten years ago, we hosted one or two water-related International Visitor Leadership Programs each year. Now, not a month goes by where we don't have at least one, two and sometimes three groups from around the world coming to the United States to learn from our examples – both good and bad. For our guests, these trips can be transformational. The relationships they make with experts here in the United States, the relationships they make with each other, serve them a lifetime.

We are also seeking ways to leverage the experience and know-how of the U.S. technical agencies along with non-governmental community. In 2012, the Department of State, along with ten other U.S. government agencies and several non-government partners like Coca Cola, The Nature Conservancy, and the University of North Carolina joined together to launch the U.S. Water Partnership. The partnership's goal is to mobilize U.S. knowledge, expertise and resources to improve water security throughout the world – particularly in developing countries. The USWP was one of six signature initiatives highlighted by the United States at the Rio+20 Summit on Sustainable Development. (At the Summit, USWP partners pledged over $600 million for water and sanitation-related activities.) In addition, we have promoted specific events to encourage the engagement of the U.S. private sector, such as the second annual U.S.-Africa Business Conference in Cincinnati, Ohio in June 2012, which held a specific meeting track on water and sanitation issues. More than 500 representatives from the U.S. and African public and private sector attended to discuss topics ranging from leveraging public-private partnerships to supporting innovations in water technologies. They also conducted site visits to the Cincinnati Metropolitan Sewer District wastewater treatment plant.

Closing

These are just some examples of how the United States is delivering on water. And while we are making progress, water remains one of our great challenges. Increased access to safe drinking water and sanitation would improve education, empower women, aid the development of youth, promote human dignity, decrease malnutrition and stunting, and reduce the pain and suffering associated with high child mortality rates. Beyond health, water will impact food security, energy security, and our capacity to manage the impacts of climate change. As Secretary Kerry has noted – building capacity on water is one of the most important things we can do to save lives.

Thank you again for this opportunity to testify before this subcommittee on behalf of the Department of State. We look forward to continuing our work with Members of the Committee, USAID, other U.S. government agencies, and other interested stakeholders to improve water

resources management and get safe water and basic sanitation to the billions who are currently without.