WATER & CONFLICT

A TOOLKIT FOR PROGRAMMING

Key Issues

Lessons Learned

Program Options

Rapid Appraisal Guide

Competition over natural resources, including water, is often viewed as a driver of conflict and has emerged as a key component in many current and past conflicts. However, disputes over water, whether scarce or abundant, do not always result in violence. In fact, the management of water often brings parties together and encourages cooperation; it can be an integral factor in conflict prevention, peacebuilding, and reconciliation processes. Since fresh water is irreplaceable and indispensable to life, it is a valuable and contested resource that requires careful, conflict-sensitive management to ensure that it will continue to fulfill its purposes over the long term.

This toolkit is intended to help USAID and our partners understand the opportunities and challenges inherent to development programming in conflicts where water is an important issue. This document (1) explores the relationship between water, conflict, and cooperation, (2) highlights lessons learned from relevant development and peacebuilding programs, (3) discusses options for programming based on past USAID and development community experiences, and (4) provides a Rapid Appraisal Guide to support officers in identifying and evaluating the conflict risk and peacebuilding potential of water programs. Together, the elements of this toolkit are designed to help raise awareness about the linkages between water resource management and conflict as well as opportunities for peacebuilding and integrating a conflict perspective into development programming.

FROM THE DIRECTOR

As Director of CMM, I am pleased to introduce The Water and Conflict Toolkit and congratulate all those involved in its production. The Office of Conflict Management and Mitigation (CMM) in the Bureau for Democracy, Conflict, and Humanitarian Assistance (DCHA) of the United States Agency for International Development (USAID) was established to provide technical leadership on conflict-related issues to USAID Missions and our Washington based regional and pillar bureaus. It is through your feedback and dialogue that we can ensure our toolkits remain thoughtful, innovative, and useful. We welcome your comments and observations to help us improve future toolkits in this series.
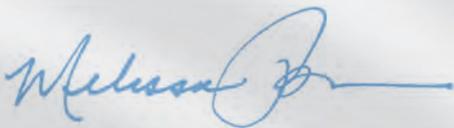
Melissa G. Brown
Director
Office of Conflict Management and Mitigation
Bureau for Democracy, Conflict, and Humanitarian Assistance
United States Agency for International Development

INTRODUCTION

Water is an essential ingredient for human security[1] and sustainable development. From growing food and supporting economic growth to ensuring disease is kept at bay, water is a fundamental and irreplaceable resource in all societies. Given its centrality to human life, it is not surprising that water management is complex and that water-related interests are frequently contested. Access to water in sufficient quantity and quality can drive competition where interests are perceived as incompatible. It can also foment cooperation where mutual interest can be found.

There is a pressing need to better understand water as it relates to all levels of conflict. From the arid pastoralist areas in the Horn of Africa to communities affected by melting glaciers in Andean South America to the burgeoning potential for hydropower fueled economies in South Asia, the banner of "water and conflict" is very broad. It includes scenarios as diverse as the peaceful resolution of an inter-communal dispute over access to a particular water source to mitigating the effects of armed conflict on water quality, infrastructure, and institutions in urban environments. Even when water is not directly connected to the proximate causes of conflict, it is essential to consider the many ways that water insecurity, which is most often derived from water resource management configurations, could be interacting with the social and institutional dynamics in fragile or conflict-affected situations. With that complexity in mind, this toolkit is designed to raise awareness about the linkages between water resource management, conflict and fragility,[2] and peacebuilding. It also explicitly supports the integration of a conflict perspective into development programming.

This toolkit is part of a series that explores how development assistance can address key risk factors associated with conflict and fragility. By exploring water-related issues in depth, this toolkit and others in the series serve as companion pieces to conflict assessments. Conflict assessments provide a broad overview of destabilizing patterns and trends in a society. While they provide recommendations about how to make development and humanitarian assistance more responsive to conflict dynamics, they do not provide detailed guidance on how to design specific activities. The toolkits in this series fill that gap by moving from a diagnosis of the problem to a detailed discussion of potential interventions. Together, the USAID Conflict Assessment Framework (CAF 2.0) and toolkits are designed to help USAID officers and other development practitioners gain a deeper understanding of the forces driving violence and instability and to assist in developing more strategic and focused development interventions. The authors have attempted to inspire creative thinking and encourage action to manage or prevent water-related conflicts as well as capture long-term peacebuilding and resilience-strengthening opportunities.

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1. The notion of human security emphasizes security for the individual, not the state.

2. *Fragility* refers to the relationship between the state and society, especially the extent to which the engagement between the state and society fails to produce outcomes that are considered effective and legitimate. Fragility exists when the relationship between state and society is strained, if not contentious, producing results that members of society deem to be ineffective, illegitimate, or both. Accordingly, *fragility* is meant to convey more than the set of characteristics of states or governments.

This toolkit is divided into the following four parts:

- **PART 1: KEY ISSUES** — explores the relationship between water, conflict, and cooperation;

- **PART 2: LESSONS LEARNED** — highlights lessons learned from water-related development and peacebuilding programs;

- **PART 3: PROGRAM OPTIONS** — discusses potential program options, real-world examples of relevant development interventions, and monitoring and evaluation; and

- **PART 4: RAPID APPRAISAL GUIDE** — provides guidance to help identify and evaluate the conflict risk and peacebuilding potential of water programs.

The Water and Conflict Toolkit emerged from collaboration with the Woodrow Wilson International Center for Scholars (WWICS). It was authored by Sandra Ruckstuhl (Group W Inc), Emily Gallagher (Group W Inc), Geoff Dabelko (Ohio University), Russell Sticklor (WWICS), Lauren Herzer Risi (WWICS), Cynthia Brady (USAID/CMM), Kirby Reiling (USAID/CMM), and Mary Ackley (USAID/CMM). Substantial input was provided by USAID officers, other U.S. Government agencies, donor agencies, academia, and the NGO community. This toolkit builds on earlier drafts prepared by a team of experts, in addition to those named above, including: Alexander Carius (adelphi), Annika Kramer (adelphi), Doris Capistrano (CIFOR), and Jay Singh (USAID). Comments, questions, and requests for additional information should be directed to USAID's Office of Conflict Management and Mitigation.

A young girl sits beside a polluted canal that flows through her village in Cambodia. (Photo by AECOM International Development)

PART 1: KEY ISSUES

A South Sudanese boy carries a box of water bottles at the Tongping United Nations Mission (UNMISS) base in Juba on January 17, 2014. (Photo by Phil Moore, AFP ImageForum)

Water management is a complex issue with far-reaching and often contentious effects. Water-related tensions emerge on different geographic scales but it is the interplay of these tensions with a number of political, socioeconomic, environmental, and cultural factors that determine whether violent conflict will result. The next section will elaborate on the complex links among water resources, their management, the risk of conflict, and opportunities for peacebuilding.

UNDERSTANDING CONFLICT

As a starting point, it is helpful to have a common understanding of conflict.

"Conflict" simply refers to a real or perceived set of incompatible interests and goals among two or more parties. It is not necessarily violent. Conflict is a natural part of public life and the process of

peacefully resolving competing interests through negotiation and deliberation can often contribute to outcomes that are better for all involved. Conflict, however, can also be destabilizing and intensely destructive when it leads to mass mobilization, violence, or outright war.

Even when water is not directly connected to the proximate causes of conflict, water security could be interacting with the social and institutional dynamics of fragile or conflict-affected situations in many ways. Water quality, quantity, and access each affect individual and collective water security. Perceptions of security can be as important to a conflict context as objective reality. Water insecurity, whether real or perceived, can contribute to patterns of grievance or fragility that could make armed conflict more likely or more intractable.

When water-related disputes arise within a context of ineffective or illegitimate governance, it can stoke the flames of discontent (grievance) or be the match that lights the fire (trigger). For example, poor water service delivery could undermine people's confidence and trust in the state. A specific event, such as a new law that changes water pricing or the failure of a dam, can spur people's decisions to join a protest, insurgency, or armed group. Additionally, disputes between communities or individuals over access or usage rights could easily turn violent in the absence of strong, legitimate governing institutions where the rule of law extends clearly over water rights.

Water can also be used as a tactic of war, such as, when a group deprives its adversaries of water access by contaminating it or blockading delivery. And, conflict itself can compromise water resources when insecurity weakens regulation, infrastructure operations, or maintenance.

Within this complex web of interactions, water disputes and challenges can also open opportunities for constructive change. Frequently, peacebuilding is a necessary, if too often unacknowledged, element of long-term sustainable water resource management.

SOCIOECONOMIC AND DEMOGRAPHIC ISSUES

POPULATION GROWTH

The bulk of the world's population growth in recent decades has taken place in developing countries. Over the next few decades rapid population growth is expected to continue in parts of Sub-Saharan Africa, the Middle East, and Asia. This kind of growth poses significant challenges to governing institutions and infrastructure in developing countries already experiencing population-induced strains on their natural resources. As demand grows and per capita freshwater availability decreases, competition will likely increase if not effectively addressed. Demand and quality management will become some of the most significant and scalable approaches practitioners can use to address conflict risks.

POPULATION MOVEMENT

Migration, displacement, and resettlement are sometimes driven by resource competition and often result in resource-based conflicts. Population movements, regardless of cause, increase the demand for water in the location where groups settle. Where resources, institutions, and infrastructure do not adequately satisfy increased demand, competition between old residents and new arrivals can result. If and when displaced persons return to their original homes, they may come into conflict with populations who did not move or who settled while original inhabitants were away. Grievances may also be heightened when returning individuals change their standards and practices while in their temporary location. Pastoralist migration, rural

Water insecurity, whether real or perceived, can contribute to patterns of grievance or fragility that could make armed conflict more likely or more intractable.

to urban migration, and refugee or internally displaced person movements are most concerning for water management and supply because of associated shifts in demand.

AGRICULTURE AND FOOD SECURITY

Agriculture is the largest source of water consumption in the world, accounting for roughly 70 percent of the world's total (WWAP 2013). The competition arising from this intense agricultural demand for water at various scales is a primary aspect of water conflict around the world. Demand for increased agricultural output to meet the food security needs of growing populations can also adversely affect water quality, as run-off from crop-growth aids such as fertilizers and pesticides contaminate groundwater supplies or adjacent bodies of surface water. At the same time, inadequate water access among small-scale farmers can hamper local food security and also cause those parties to turn against one another or against industrial-scale agricultural interests or state water managers in competition for what little water is available. In sum, agriculture is characterized by multiple party interests associated with broad health, economic, and social benefits. This can drive intense resource use, heighten concerns about insecurity and, consequently, contribute to competition and conflict.

INFRASTRUCTURE DEVELOPMENT AND MODERNIZATION

Industrial development can cause significant environmental stress, including overconsumption and pollution. On a local level, access to drilling and pump technology can lead to increased installation of shallow wells and groundwater over-extraction. Wealthier and more powerful parties often have better access and can more easily afford new and advanced technology

to compensate for declining supplies, possibly further compromising water supplies for more vulnerable populations and generating inter-class grievance. For example, effluent from factories and wastewater from extractive industries can pose serious threats to human and environmental health. Associated water quality degradation can cause disputes between the parties that cause it and the groups affected by it. In other cases, multipurpose water infrastructure, such as dams, can cause controversy. Dams and reservoirs can necessitate population resettlement and changes in livelihoods, which can mobilize grievances against the authority and interests that supported or orchestrated the infrastructure development. The operation of irrigation canals and dam spillways can also lead to friction between upstream and downstream users, within or between nations, as the quantity and timing of release will impact multiple water users. Additionally, water quantity and water flow patterns are crucial for maintaining ecosystems and agricultural systems, especially those that depend on seasonal flooding. As technology and infrastructure affect hydrological flows and water consumption patterns, many interests can be impacted and resulting perceptions of water insecurity can contribute to patterns of fragility and even direct confrontation.

INSTITUTIONAL ISSUES[1]

DATA AND INFORMATION MANAGEMENT

Water information influences economic behavior, population movement, and politics, with resultant impacts on security perceptions. Development strategies require sound hydrological

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1. Institutions are the "formal rules, written laws, organizations, informal norms of behavior, and shared beliefs — and the organizational forms that exist to implement and enforce these norms…" (World Bank 2011)

A farmer in Ghana waters his corn crop during the dry season. (Photo by Louis Stippel, USAID)

The stabilization pond of a wastewater treatment plant in Luxor, Egypt. (Photo by Noha El Maraghy)

and socioeconomic data in order to plan adequate water management and infrastructure to meet demand, ensure sustainability, and to improve users' resilience to future changes in water resources and supply. In addition, improved information sharing and transparent data collection regarding water supply fluctuations or water safety issues can reduce mistrust and suspicion among and between groups. Yet, reliable water data is often difficult to obtain because of technical requirements in measurement. In conflict-affected countries data is often not collected or may be lost due to physical insecurity, infrastructure damage, and competing demands on government time and resources. Furthermore, when that data is captured, in some contexts parties that hold the data may modify or suppress it to protect their interests (political or otherwise), thus limiting its application and availability to users. Water data can be highly contested by water-using parties, and its accuracy can be the subject of significant disputes. Even when reliable water data

is available and uncontested it may not be accessible to all parties. For example, it may be poorly organized or publicized so that certain users are unaware it exists or are unable to access it (e.g., due to language or internet access). Also, a variety of accurate data sets may exist but there can be complications in comparing them across time and space. Even high quality data may generate significant uncertainties, as in the case of downscaling climate models to regional or local scales or projecting future precipitation patterns under different climate scenarios.

Sharing information becomes both more important and increasingly difficult as a water management unit's scope grows or the number of parties sharing water increases. In the midst of these realities, effectively sharing water information during emergencies, such as floods or severe contamination, is crucial for protecting human and environmental health and managing perceptions of insecurity in tense and tenuous circumstances.

Children sharing water in Gambella, Ethiopia. Gambella is affected by inter-communal conflict associated with competition over land and water. (Photo by Cynthia Brady, USAID)

WEAK, NON-INCLUSIVE, OR CORRUPT GOVERNANCE

One of the most pressing and complicated issues influencing effective and equitable water management is corruption. This issue is intertwined with water information management, as a lack of transparency and public knowledge about water management (e.g., allocation of water rights, private sector contracts) can mask inequitable benefits and preferential treatment within a weak or corrupt governance system. Perceptions of preferential access to limited water resources are often a source of grievance. Moreover, preferential treatment, which benefits parties of economic, social, or political influence, weakens regulatory regimes and sustainable water management and can contribute to imbalanced economic opportunity. Corruption can increase marginalization and exploitation of disadvantaged and vulnerable populations. Political corruption can generate significant social unrest at the local level by exacerbating water-related economic and health issues among already vulnerable groups.

INSTITUTIONAL EFFICACY

Low technical competence and lack of political will of government and other water-management institutions can result in inequitable or ineffective water management. This can be an indicator or consequence of fragile state-society relations. Lack of technical water expertise, insufficient technical training of water managers and engineers, absence of water-dispute settlement mechanisms, and inadequate funding of water programs and infrastructure hinder capacity to build social and institutional resilience to internal and external water-related challenges.

A common challenge to institutional efficacy is duplicative or overlapping responsibilities among multiple formal and traditional water institutions. For example, decisions made by entities responsible for agriculture, fisheries, water supply, regional development, tourism, transportation, conservation, and environment can produce divergent management approaches that serve contradictory or competing objectives toward the same water resources. These decisions lead to confusion and competing claims from different sectors

BOX 1: Women, Water, and Conflict

Men and women use water differently according to their gender-specific roles. Women tend to have greater water needs due to their domestic responsibilities like washing family clothes, bathing children, and preparing meals. Even basic hygiene, like hand washing to reduce the transmission of disease, increases water needs at the household level. Menstruating women have additional demands such as washing clothing and bathing when men are not present. If the only water source is in a public or highly frequented location, they may wait until dark or travel to remote areas for privacy.

Women produce half of the world's food supply. They are often responsible for feeding their families. As small farmers who are dependent on sources beyond rainfall, women and their dependents are at risk of food insecurity when alternative water sources are not available.

Yet, water is hard to access in many parts of the world. When water is far from home, women and girls generally shoulder the burden of transporting it. They may be at risk of harm during travel to obtain it.

These patterns make females highly vulnerable to violence in conflict environments. Water access becomes more difficult as previously safe routes become dangerous territory. Household responsibilities may increase such as caring for the sick and wounded or meeting family members' nutritional needs. Taking care of personal hygiene by dark or in isolated places increases the risk of direct or indirect violence.

A young woman collects water in Sri Lanka. (Photo by USAID/Sri Lanka)

The humanitarian discussion of water access and violence generally focuses on women as victims. However, water resources are part of a system that affects and is affected by its entire population. In some contexts, men and boys access water for their households and face the same risks as females. Women and men may travel far for water in rural areas, or walk long distances from refugee settlements or slums, and thus be more vulnerable to attack. For example, there is anecdotal evidence of Somali men killed over water access and the "water widows" who have survived them. Both women and men are affected by poor water access and the complications of a fragile or conflict-affected context.

The experiences of men and women are also not consistent across time and culture. There is variation across gender experience based on social and community tradition, class structure, ethnic relations, urban vs. rural environments, livelihoods practices, and more. Due to their different roles in the community, women and men may have different information and perspectives about the causes and consequences of water-related problems. In addition, gender roles themselves often change as a consequence of conflict and fragility. Water practitioners will therefore find it constructive to move their analysis beyond the limited focus on female vulnerabilities and to consider gender dynamics within the system as a whole.

How can field staff better understand gender and water access issues? Seeking gender- and age-specific data, these questions serve as a starting point to examine how water access connects to wider conflict dynamics:

• Who is at risk of harm when accessing water?

• Who perpetrates the harm? What means do they use, and what are their objectives?

• Does the conflict involve water supply and resources? Directly or indirectly? Are there opportunities to mitigate the conflict by addressing water access?

• How do gender roles associated with water access change over time?

Adapted from S. Ruckstuhl 2011.

and interest groups, which can contribute to disputes in locations lacking a clear system of water allocation and enforcement and unsupported by effective and legitimate institutions. Furthermore, if a state or local water-management body is not delivering on core public services like household provision of potable water or effective management of large infrastructure, that failure can quickly be perceived as a sign of government ineffectiveness or illegitimacy.

However, because water is crucial to myriad different sectors and disparate users, it is not feasible to consider all of these in one institution or decision-making process, and it is not possible to optimize across all areas at once. For example, a dam cannot be managed to simultaneously optimize both flood and drought protection. Consequently, there are trade-offs between contending interests and objectives, and choices made at one time at one scale in one sector will inevitably conflict with choices made at other times and other places.

TRADITION AND CUSTOMARY PRACTICES

Custom and traditional norms are significant components of water management regimes and can strongly influence user preferences and affect institutional contexts. For example, a formal state body may legally hold decision-making authority while users defer to customary authorities regarding secondary and tertiary rights unrecognized by the law. These practices can dictate user rights, seasonal allocations, wastewater reuse conventions, operation and maintenance practices, and conservation methods. As another example, it may be tradition in some societies for women to collect water, which can have social and institutional implications for physical safety and participation in education and livelihoods (see Box 1). Further, water plays a key role in many religious rituals, making it a focal point of community activities and giving it significant emotional importance (e.g., the holy river Ganges in India).

In some locations, traditional institutions and formal government bodies compete for authority, and they may not collaborate frequently or effectively. Traditional mechanisms that fail to consider technical aspects of the hydrologic regime can contribute to unsustainable water use or, as the environmental conditions or technology access change, they may be ill-equipped to adapt and manage associated conflict risks. In addition, when formal institutions make water management decisions without sufficient stakeholder participation, effective or locally valued traditional practices may be overlooked or ignored. As a result, controversy can erupt and concerned parties may reject new water policies and infrastructure.

EXTERNAL INFLUENCES

HYDROPOLITICS (WATER POLITICS)

There are 276 transboundary river basins in the world and 256 (or 92.7 percent) of them are shared by two to four countries (UN-Water 2013). Within that realm of shared water there are extensive opportunities for potential disputes within, between, and among states and water-users. In terms of understanding the risk of large-scale violent conflict over these resources, reviews of historical evidence show that armed interstate "water wars" are exceedingly rare. However, as demand grows and global freshwater resources become ever more stressed, practitioners must be aware of changing risks and opportunities and adapt their interventions accordingly. This includes careful consideration of the ways in which water may be a dimension of political conflict at international, national, and local levels as well as the relationships between those dynamics. Localized disputes between users and domestic water interests often influence politicians and policy decisions, which fuels international political agendas and

Localized disputes between users and domestic water interests often influence politicians and policy decisions, which fuels international political agendas and informs relations between countries.

informs relations between countries. Conversely, interstate water politics and tensions can have ripple effects that affect the ability of national institutions and local users to effectively manage water for domestic needs. Technical, political, local, and international concerns are often inseperable, for good and for ill. Therefore, it is important that both diplomatic and development interventions, at all scales, consider dimensions of hydropolitics in order to manage and prevent conflict escalation while harnessing opportunities for collaboration and peacebuilding.

INTERNATIONAL DEMAND FOR ECONOMIC PRODUCTS

Agricultural products, minerals, and manufactured goods all require water for production. High demand for these items on the international market, which can be extremely difficult for developing economies to regulate, especially those affected by fragility and conflict, can drive up water consumption in locations where the goods are

sourced, processed, or manufactured. This dynamic might mean that local producers will choose to grow more profitable crops for export at the expense of local food production, for example. While this may be beneficial for a few, it can come at the expense of others' livelihoods and their access to water, productive land, and affordable food. In the short term this can contribute to perceptions of water insecurity and fuel grievances against groups that are benefiting from the export market. In the long term, these economic interests can deplete water resources and directly contribute to water insecurity for other users.

PHYSICAL AND GEOGRAPHIC ISSUES

UPSTREAM AND DOWNSTREAM FLOWS

Every water resource has upstream and downstream riparians and associated advantages and disadvantages often accrue depending on where

In developing nations, 90 percent of wastewater is released into the natural environment without treatment.

they are physically located. For example, upstream diversions of water for agriculture or hydropower can have downstream impacts on local users, including effects on livelihoods and health. Downstream activities can also impact upstream riparians, such as, when a port downstream engages in activities that increase traffic upstream. In other cases, cities may overdraw a region's limited water supply to meet urban municipal and industrial water needs, which can contribute to water insecurity in rural areas that share the resource. Riparian disputes often reflect the distribution of power among institutions along a waterway. Without mutually acceptable mediation mechanisms in place, failure of those institutions to protect perceived user interests can result in violent disputes. Upstream and downstream riparian relations are critical to consider in both local and international contexts.

GROUNDWATER

The most readily available resource of freshwater on the planet is groundwater (UNEP 2008). In the developing world and elsewhere, groundwater is an essential resource—1.2 to 1.5 billion rural households in the poorer regions of Africa and Asia alone depend on groundwater for their livelihoods and food security (United Nations World Water Development Report 4 2012). Subterranean water resources pose particularly acute governance challenges. They require sophisticated technology and significant knowledge to be sustainably managed. By contrast, even when surface water is not systematically measured it can, at a minimum, be visually monitored. As a result, groundwater resources are at heightened risk of unsustainable consumption, pollution, and uninformed perceptions with regard to quantity and quality of available resource. This can result in acute competition and conflict as groundwater users engage in a "race to the bottom." In terms of both monitoring

and enforcement, it is also a particularly complicated factor in transboundary treaties and agreements.

POLLUTION

Pollution and contamination from agricultural run-off, human and animal waste, extractive industries, and manufacturing, as well as naturally occurring sources affect surface and groundwater water quality and can pose significant health risks as well as degrade livelihoods. While flooding may often be responsible for temporary discharges of untreated waste into public water supplies, the problem transcends temporary wastewater-treatment issues spurred by disasters. In developing nations, 90 percent of wastewater is released into the natural environment without treatment (Corcoran 2010). This can cause significant damage to ecosystems and watersheds, placing water supplies at risk, endangering food supplies by threatening the health of crops and fresh-water fisheries, and also damaging economically lucrative ecotourism industries. During active conflict, contamination of water resources can be especially common. Regulatory agencies and management mechanisms may collapse, or groups may intentionally damage water resources in an attempt to harm one another. Less knowledgeable groups living in close proximity to contaminated water are the most vulnerable to its effects, and while knowledge can reduce vulnerability it can also fuel grievances toward unaffected water users, polluters, and regulatory institutions.

CLIMATE CHANGE

Climate change impacts water availability, quality, and access in a number of ways: shifting precipitation patterns, desertification, saltwater intrusion, and changes in storm frequency and intensity, to name a few. In particular, changes in the timing and duration of rainfall can threaten food security, especially when crop growth or livestock

migration is dependent on seasonal precipitation. Changes in precipitation patterns can further challenge traditional and formal systems for collecting and using water for any number of purposes (water storage, energy production, sanitation systems, drainage systems, etc). Climatic change and the associated impacts on the hydrologic regime are likely to affect the way people live in the developing world, shifting and testing the adaptation and coping mechanisms of communities and institutions. These changes present many conflict risks where there is weak institutional capacity to constructively adapt to changes in water variability or to respond to extreme events like floods and droughts. At the same time, these challenges can highlight positive examples of existing social and institutional resilience and reveal the strength of coping mechanisms and adaptation systems that continue to work well in the face of change, giving development practitioners a practical foundation on which to build peace.

NATURAL DISASTERS

Disasters such as cyclones, tsunamis, earthquakes, floods, and droughts can create shocks to the water supply and can render unprepared communities vulnerable to health risks and economic disruptions, potentially leading to social unrest in the transitional process from crisis to recovery. Additionally, weak institutional infrastructure for managing water availability and access in the wake of a natural disaster can heighten public perceptions of institutional ineffectiveness or illegitimacy. The risks of public discontent and mobilization are intensified in densely populated areas, especially in communities where there is inadequate capacity for crisis response. A lack of disaster-preparedness at the national and sub-national levels within a country can significantly lower resilience to environmental shocks. A low threshold for handling environmental disruptions can negatively impact other areas of society by reducing economic productivity and triggering high unemployment, damaging public perceptions of governing institutions' competence, and raising tensions between various water users over access.

PART 2: LESSONS LEARNED

Refugees from South Sudan fetch water at the Dzaipi Refugee Transit Centre in Adjumani, Uganda, on January 24, 2014. (Photo by Isaac Kasamani, AFP ImageForum)

A review of water-related development programming throughout the developing world and across multiple agencies and organizations reveals a range of success stories as well as cautionary examples. When these lessons are aggregated, they can be conceived of as principles of good practice and applied to improve the conflict sensitivity of water-related development interventions.

CONSIDER ALL WATER ISSUES AS PART OF COMPLEX, DYNAMIC CROSS-BOUNDARY SYSTEMS

Water management is dynamic. The resource can cross physical, social, and economic boundaries. Transforming zero-sum competition for the resource into win-win management outcomes is a necessary objective of conflict-sensitive water management. Accordingly, mapping and understanding stakeholder relationships is important. Stakeholder interests can cut across many identities and boundaries as a result of management and use decisions, for example, among ethnic groups across administrative boundaries or between industrial users such as energy and agriculture. This complexity calls for sound, well-integrated Conflict Assessments and Environmental and Social Impact Assessments that include cross-boundary issues during project design and implementation.

There must always be a systemic view of the hydrology and the social and institutional dimensions of conflict that water may affect. Integrated assessments help practitioners understand the physical, social, and political dimensions of the system in which they are intervening and gauge the anticipated points of influence within that system and across various types of boundaries. For example, in many areas growing tensions persist between urban water users and residents of surrounding rural areas. Urban populations typically consume large amounts of water sometimes at the expense of adjacent rural users, and yet urban areas tend to come out on top of any water-dispute litigation because local, regional, and national political power tends to be concentrated in urban centers (ECC 2010).

Given the multifaceted, and potentially fluid nature of water-related boundaries—from international divisions to cultural uses—it is especially valuable for government institutions, donors, and field implementers to coordinate sectoral assessments so that water resource management and peacebuilding investments are more integrated. It is also critical to monitor and evaluate progress on a continual basis so that programs can be responsive to potentially changing points of influence and unforeseen impacts.

ENHANCE INFORMATION MANAGEMENT AND PUBLIC AWARENESS

Water data and public awareness can be sparse in fragile and conflict-affected countries where records may not have been kept, were destroyed during fighting or as a tactic of war, or where there has been limited capacity to collect and disseminate information. Nevertheless, accurate water data—including hydrological modeling, infrastructure, policy, and user behavior—is integral to ensuring that development activities are designed to support sustainable and integrated water resource management (IWRM) activities and, in turn, help to manage and prevent conflict. For example, capacity to generate and analyze water data enables water resource management institutions to formulate and implement conflict-sensitive water resource management plans, while contextually grounded technical infrastructure design and implementation can aid in conflict prevention by equitably distributing costs and benefits.

Sound water data and public awareness allow for prudent responses to water disruptions that could otherwise fuel grievance and social conflict. Where information is lacking, unsustainable water use or ineffective water management may persist and raise the risk of social crisis. In Yemen, for example, water scarcity is an increasingly prevalent source of discontent and a trigger for violence. Some hydrologists project that the

Transforming zero-sum competition for water into win-win management outcomes is a necessary objective of conflict-sensitive water management.

A U.S. Navy commander meets with the head of Ethiopia's Mines and Energy Department and a water engineer for preliminary research on expanding the area's water treatment capabilities. (Photo by U.S. Navy)

capital, Sana'a, will run out of water by 2025 (Chellaney 2013). Yet even where there is political will to change that trajectory, water officials in the country face critical challenges implementing water reforms because the population is not well-informed about the the impending water crisis and how it relates to water user behavior. Good data and better public information, along with improved capacity of responsible institutions and appropriate mechanisms to allow all interested stakeholders access to the data and information, could facilitate a tipping point for change in Yemeni water usage, forestalling a water crisis and improving water management outcomes for Yemeni stakeholders.

Hydrological modeling and databases can be costly and laborious to establish and maintain; such investments are often of low priority in conflict-affected or post-conflict countries. In the absence of comprehensive databases, shared data generated or sanctioned jointly by all stakeholders can facilitate more sustainable water resource management decisions.

Third-party data collection, whether by NGOs, academic institutions, or others, may also help bridge the data gap between divided parties. Transparency of joint decision-making can facilitate more informed decisions by all sides and often builds trust among water-sharing parties. At the same time, it is important to be mindful that there is a corresponding risk with increasing access to data and information. While the intent of increased transparency is to reveal helpful realities about supply as well as water governance, in a context of poor institutional performance or high social grievance these revelations risk conflict escalation if they inflame public opinion and reinforce perceptions of elitism, exclusion, and corruption. Therefore, development activities focused on improving water-related transparency should also take into consideration the capacity of the responsible institutions to manage and respond to grievances that may emerge.

BUILD FORMAL AND INFORMAL INSTITUTIONAL CAPACITY FOR COLLABORATIVE GOVERNANCE

Institutions that govern collaboratively can prevent and manage conflict by:

• Striving for *effective* engagement by key stakeholders;

• Considering different interests in order to reveal new management options and alternatives to zero-sum solutions;

• Improving cooperation between traditional and formal governance bodies; and

• Making management decisions better accepted by all stakeholders, even if consensus cannot be reached.

It is generally prudent for development practitioners to engage with established traditional and formal water resource managment institutions in order to bolster capacity, ensure local sensibility, and improve sustainable outcomes. However, established institutions (whether formal or informal) with responsibility for water resource managment may not be technically equipped to manage conflict and aggrieved water users may not perceive them as effective or legitimate mediators. At the same time, there may be preference or bias, depending on the audience, toward certain institutions based on perceptions of effectiveness and legitimacy. Therefore, in addition to understanding the institutional construct for water resource managment in a country or basin, practitioners must seek to understand the social and institutional context in which those entities are functioning.

Practitioners must also consider the likely influence of a development intervention

on that local context (including both intended and unintended consequences). Understanding the context, including both key actors' and stakeholders' needs, capacities, motives, and respective positions in the political or socioeconomic hierarchy is crucial to ensuring conflict-sensitive programming and to identifying and responding to any real or perceived imbalances in public participation, issues of institutional performance, and social grievances. In some cases, it may be necessary to work with alternative institutions or other stakeholders who hold influence over water institutions and their efficacy. To ensure effective stakeholder representation in water resource management processes — especially when power is unevenly distributed — less experienced, less knowledgeable, or less empowered parties (whether individuals, collectives, or institutions) may require special attention, for example in the form of coaching, skill building, and awareness raising.

Recognizing the important nexus of conflict resolution capacity and technical water resource management capacity, USAID's Fostering Resolution of Water Resource Disputes project (FORWARD), for example, targeted capacity building in the conflict-management "know-how" of water resource management institutions, local non-governmental organizations, water user associations, and religious groups to help mitigate water-related conflicts in Asia and the Middle East.

STRENGTHEN EQUITABLE AND AFFORDABLE WATER ACCESS

Grievances can easily develop over infrastructure coverage and efficiency as water users become aware of imbalances in access as compared to other groups and other locations. These imbalances may be the product of providers' preferences toward certain

Understanding the context, including both key actors' and stakeholders' needs, capacities, motives, and respective positions in the political or socioeconomic hierarchy is crucial to ensuring conflict-sensitive programming.

Practitioners incorporating the private sector into their programs on any level...need to closely monitor and manage affordability and the differential impacts of pricing on vulnerable groups and populations at risk of engaging in conflict.

constituents or due to their concern about operating in insecure or violent locations. Inefficiencies can also be the result of war and violence that have damaged supply systems and led technical talent to move to a new location (e.g., to an urban area or outside the country). Consequently, some locations may have poorer physical infrastructure and less operations and maintenance capacity. These conditions can strain relationships between water users or with the institutions responsible for service provision, sometimes creating new grievances or inflaming existing ones. Practitioners need to be cognizant and, through assessment and monitoring activities, remain knowledgeable of how development investments can contribute to inequitable coverage and associated grievances so that programs can make appropriate adjustments if any issues emerge.

Affordability is another major determinant of water access. Private sector participation can be an appropriate and effective avenue for improving water services coverage and water safety. At the same time, privatization can also cause controversy due to pricing and payment policies. Practitioners incorporating the private sector into their programs on any level — for infrastructure development, utility management, water trucking, or other purposes — need to closely monitor and manage affordability and the differential impacts of pricing on vulnerable groups and populations at risk of engaging in conflict.

Dialogue, transparency, and consensus-building are essential when introducing new water schemes that affect cost and availability, whether they are managed publicly or privately. In some cases, water privatization efforts have escalated social tensions and led to protests that adversely affected development programming. Sudden tariff increases that can accompany privatization can quickly mobilize public opposition and, in some instances, have become

an avenue for conveying a wider set of grievances against authorities. In the late 1990s, water privatization in Cochabamba, Bolivia sent water rates soaring by 35 percent. In a city where many residents' monthly income was roughly US$70, water became a prohibitively expensive commodity at US$20 per month. The resulting protests in early 2000 triggered violence and the declaration of a state of emergency (Gehrig and Rogers 2009). However, the lesson of Cochabamba is not that privatization is inherently conflictive or even that higher rates are conflictive. Violence was fueled by the lack of transparency in the process, combined with unrealistic expectations by the public and lack of political sensitivity by the government.

COORDINATE WATER-RELATED AID AND INVESTMENT

In order to avoid duplication, leverage programmatic synergies, and ensure that shared water resources are managed effectively, communication between development actors is critical. However, in conflict-affected environments where aggrieved or displaced populations are already mobilized and security conditions are precarious, integrated water management can be elusive and the consequent risks of failure multiplied. Poorly coordinated or non-conflict sensitive interventions could generate competing priorities, unintentionally reinforce power dynamics or entrench the status quo, empower or disempower certain groups, or exacerbate a critical source of pre-existing grievances (e.g., corruption, environmental damage, private sector predation).

The Ad Hoc Liaison Committee (AHLC), a donor coordination group established for the West Bank and Gaza following the signing of the interim peace agreement between Israel and the Palestinians in 1993, offers an example of how development

partners can assist in the establishment of a new and sustainable IWRM regime during political transition. The interim agreement included provisions for cross-border water governance. Under these circumstances the AHLC had the unique challenge of supporting water service and infrastructure improvements and supporting the set-up of new Palestinian water institutions. Working groups were established under the AHLC for each sector, including water, and these were co-chaired by one staff person from a donor agency and one from the Palestinian Authority. Group members shared studies and analyses, investment plans, project data, field site experiences, and information on government, stakeholders, and local expertise. Due to limited time and resources no coordination group can be flawless but the AHLC helped to inform water project implementation during quickly changing political circumstances marked by evolving administrative rules, and it facilitated more strategic coordination between the donors and the riparians.

It is also essential for development practitioners to look beyond sector labels when they consider the relevance of water issues to their activities. In health, water is often a necessary component of interventions on sanitation, hygiene, and disease transmission. In agriculture, water is linked to food security and access to rural markets. For energy and industry, water is required for production. In education, latrines with water can be a cultural requirement for girls' attendance at schools. In peacebuilding, access to irrigated water may be a prerequisite for the successful transition to agricultural livelihoods for former combatants. Unfortunately, when the role of water is not acknowledged explicitly in sectoral programs water issues may not be adequately considered or technically addressed — possibly leading to ineffectiveness, unsustainability, or competition between users (e.g., agriculture vs. public health or energy vs. environment). Integrated water resource governance is an important tool for sustainable development and

sometimes for peacebuilding, so practitioners must take care not to allow administrative labels to limit their own creativity and innovation in coordinated programming.

ENSURE CONFLICT-SENSITIVE DESIGN AND CAPITALIZE ON PEACEBUILDING OPPORTUNITIES

Water-related programs must take into account impacts beyond water sector objectives (e.g., increased access to potable water or implementation of disaster risk reduction plans). Secondary effects of programming, intended or unintended, may have direct and significant impacts on other development objectives. At a minimum, the design and implementation of water-related activities need to be conflict sensitive (see Box 2). Policies and programs should include consultations with the local population, respond to the needs of the people, take account of power distribution and social order, and avoid pitting groups against each other.

While competition between various parties to maintain water security can serve as a polarizing force, the basic human need for an irreplaceable resource such as water can also drive cooperation and peacebuilding within and between parties — whether individual water users or institutions. When designed with a good understanding of the conflict context, projects can proactively serve to manage or resolve conflict related to water and associated issues (e.g., livelihoods, energy demand) while achieving sectoral water goals as well. Furthermore, water resource management may be an acceptable subject around which to convene parties even in the midst of high political tension or open violence. When used strategically to bring parties in conflict together, whether to specifically deal with water-related conflict or even when water is not the point of direct contention, water projects can serve as opportunities to strengthen governance, enhance trust among affected parties and institutions, and create mechanisms for dialogue and dispute resolution. When practitioners working in conflict-affected or fragile situations take the time to understand the role of water issues within the conflict system, collaboration around water management can take on added meaning beyond sectoral water objectives; it can be harnessed as a catalyst for positive change.

BOX 2: Conflict Sensitivity and "Do No Harm"

Together, "conflict sensitivity" and the "Do No Harm" approach require a practitioner to:

a. Understand the context in which s/he is operating. In particular, to understand intergroup tensions and the "divisive" issues with a potential for conflict, as well as the "connecting" issues with the potential to mitigate conflict and strengthen social cohesion;

b. Understand the interaction between the intervention and the context; and

c. Act upon that understanding, in order to avoid unintentionally feeding into further division and to maximize the potential contribution to strengthen social cohesion and peace.

Why is conflict sensitivity important?

Conflict sensitivity is fundamentally about making foreign assistance more sustainable, effective, and ethical. Organizations operating in a country context become part of that context. They interact with the conflict dynamics whether they intend to or not, creating new risks and opportunities for USAID, its partners, and the communities where they work. The idea behind conflict sensitive practice is to make practitioners more aware of the context, more self-aware and deliberate in their actions, and more strategic and responsible in the risks taken.

A boy in the Democratic Republic of Congo carries a bucket of water in the early morning. (Photo by Ken Wiegand, USAID/DRC)

STEP 1: Understand the conflict context.

A systematic conflict assessment and rolling conflict analysis should help donors, implementers, and stakeholders understand the conflict dynamics: patterns of grievance and resilience, how key actors mobilize groups for peace or conflict, and which likely events could trigger violence or create openings to build peace. At a minimum, conflict analysis for conflict sensitivity requires basic knowledge about the dividing and connecting issues in a society as well as important actors pursuing conflict or peace. Where possible, analysis should be done in conjunction with local partners and updated during project implementation.

STEP 2: Understand interactions between the project and the conflict context.

What is the interaction between the identified key elements of conflict and fragility and key elements of the intervention itself? The three fields of observation include: (1) the project, (2) the partners and stakeholders, and (3) the organizational setup. Identify relevant factors in each of these categories which are either creating tensions or positively affecting the conflict context. This should include consideration of sequencing and how the intervention fits with other assistance activities (e.g., connecting humanitarian assistance and development interventions thoughtfully).

STEP 3: Adapt and make strategic choices.

There are always options and opportunities to be more conflict sensitive. Project, program, and management decisions should be taken on the basis of conflict analysis. Be prepared to admit mistakes and make changes — donors and beneficiaries will be appreciative. Remember that conflict sensitivity is as much about HOW you work as WHAT you do; it is possible to modify a project while keeping the goals the same. Making reflective, strategic adaptations in operations and implementation should become part of the program management cycle.

Adapted from Swiss Peace: KOFF conflict sensitivity factsheet and CDA Collaborative "Do No Harm" Program Resources and Fact Sheet
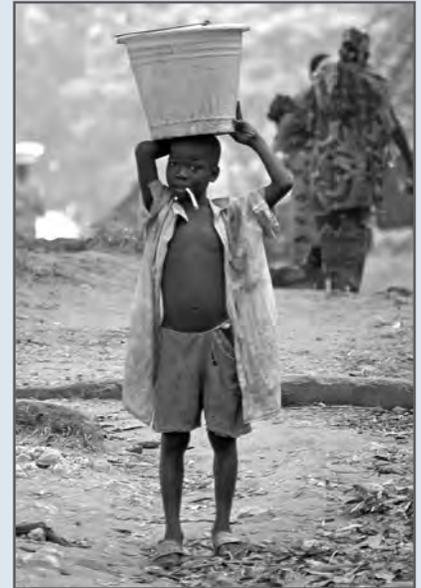
PART 3:
PROGRAM OPTIONS
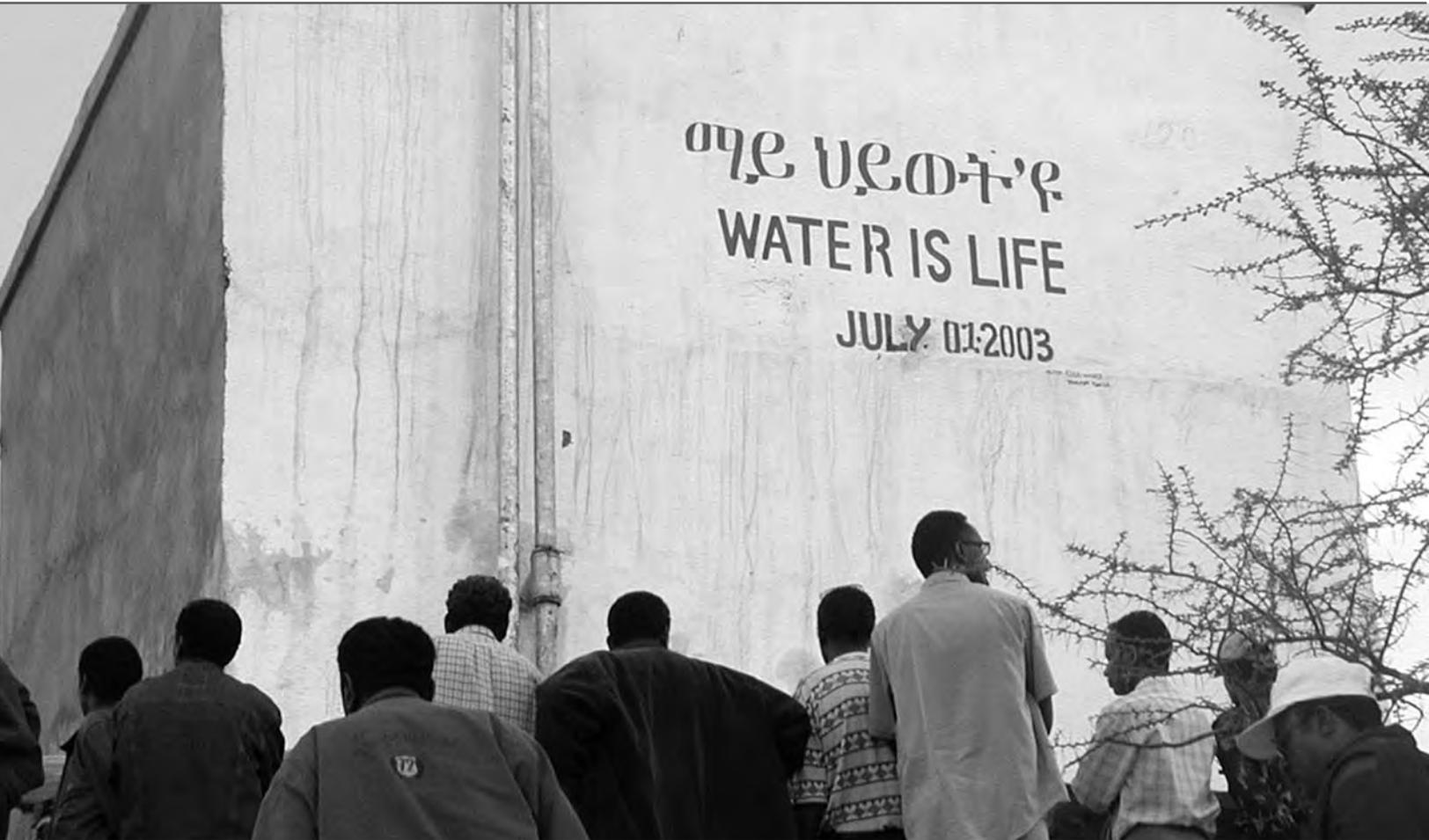
A new water plant opens in Eritrea in 2003. (Photo by USAID)

Water-related development activities can most effectively contribute to conflict management and prevention as well as foster cooperation through three primary categories of intervention: (1) strengthened planning and governance, (2) enhanced citizen knowledge and user behavior, and (3) water as a tool for peacebuilding. Section (4) addresses monitoring and evaluation approaches in conflict-affected and fragile contexts. As a reminder, it is essential that all water programs designed and implemented in conflict-affected or fragile situations heed the principles of conflict-sensitivity even when the program's goals remain sectoral.

1 STRENGTHEN PLANNING AND GOVERNANCE

BUILD UPSTREAM-DOWNSTREAM TRANSBOUNDARY RELATIONSHIPS

From 2004 to 2009 the Nile Basin Initiative (NBI) implemented the Nile Transboundary Environmental Action Project (NTEAP) under their Shared Vision Program (SVP) to foster cooperation among the ten states that share the Nile River. With a history of internal conflict over competing water demands within the majority of the Nile Basin countries, the project was designed to foster collaborative governance efforts between the countries in ways that would better manage the transboundary environment and reduce water-related conflicts both within and between states.

NTEAP sought to strengthen the relationship between stakeholders through collective efforts on 347 community-level projects and capacity building with adherence to IWRM principles in each of the NBI countries. The project achieved this by supporting the establishment of regional and national working groups to manage wetlands in the region, distributing 234 environmental and community-based micro grants, training over 250 professionals in environmental risk management, and creating a water quality monitoring system with sampling stations in each of the basin countries. The project helped build momentum for the 2008 Nile Basin Development Forum at which seven ministers and state representatives signed a non-binding declaration agreeing to cooperate and preserve the Nile environment. The initiative was impacted by major political transitions in the basin in 2011 but NBI is still held up as a global model, and its lessons are proactively applied in other development projects in basins around the world (Nile Basin Initiative 2009).

IMPROVE INSTITUTIONAL CAPACITY FOR DATA MANAGEMENT

The Southern African Regional Environmental Program (SAREP) worked with the Okavango River Basin Water Commission (OKACOM) in Angola, Namibia, and Botswana to improve regional collaboration mechanisms for mitigating local conflicts over shared water resources. One component of the project was a database called the Land Use Conflict Information System (LUCIS), which used geographic information system modeling and spatial data analysis to flag locations at risk of resource conflict. This early warning mechanism included water provision and water quality data to enable the resolution of local, national, and transboundary water- and land-related conflicts. For example, the purpose of the data was to reduce resource conflicts by identifying at-risk areas where SAREP should implement local livelihood diversification and conservation projects. SAREP launched LUCIS in Botswana, followed by the same national effort in Namibia. Later these programs were merged into a region-wide database. SAREP was funded by USAID from 2009 to 2013 (OKACOM 2012).

IMPROVE CITIZEN DIALOGUE WITH POLICYMAKERS

The Jordan River is a source of political tension between Jordanians, Israelis, Palestinians, Lebanese, and Syrians as the countries struggle for control of a shared water source that is being depleted at an unsustainable rate. Large agricultural, domestic, and industrial demand for water among these states far surpasses natural supply in the basin. As a consequence of domestic policies and strained cross-border relations, 96 percent of the river flow is diverted. To combat depletion of the valley's water resources and to increase cooperation among the states, EcoPeace/Friends of the Earth Middle East initiated the "Rehabilitation of the Jordan River: A Commitment of

USAID's regional environmental program in the Okavango River Basin of southern Africa focuses on improving the management of this shared river basin. (Photo by Chris Schaan, USAID)

An oil spill in Nigeria's Niger Delta pollutes a waterway near the Escravos export terminal on March 30, 2003. The region's oil facilities were closed down and evacuated during two weeks of ethnic violence. (Photo by Pius Utomi Ekpei, AFP ImageForum)

Faith'' project in 2013. Building on over a decade of community-based cooperation through the Good Water Neighbors project (see page 23), the new initiative engages religious groups and community leaders in Israel, Jordan, and the West Bank through environmental education on the lower Jordan River. The area's influential religious groups are trained in effective communications to empower their communities to engage with local governments on policy reform to support restoration of the Jordan River and sustainable transboundary basin management. In 2013, for the first time in 49 years, fresh water was released from the Sea of Galilee into the lower Jordan River, and Israel and Jordan created a subcommittee to rehabilitate the river. The faith-based campaign is targeting religious leadership to build on these advances (FOEME 2013 and 2013a).

STRENGTHEN REGULATORY CAPABILITIES FOR WATER MANAGEMENT

In Nigeria's Komadugu Yobe Basin, upstream of Lake Chad, the threat of conflict between water users has increased dramatically over the last 40 years. A lack of coordination in hydro-agricultural developments combined with fragmented regulation of water use has led to widespread environmental degradation and caused changes in the river's natural flow patterns. Implemented by the International Union for Conservation of Nature from 1999 to 2006, the Water and Nature Initiative sought to prevent local conflict by reforming the basin's water governance institutions and legal frameworks and increasing stakeholder dialogue by creating IWRM committees in each state. The initiative facilitated a stakeholder-endorsed Water Audit and database of ground and surface water availability and demand, a Catchment Management Plan for land and water management, and a basin-wide Water Charter to support these activities. By 2006, there was a 90 percent decrease in the number

of water conflicts reaching the court system. This was attributed to more integrated management of the basin among riparian users (WANI 2006).

COMBINE INFRASTRUCTURE AND INSTITUTIONAL INVESTMENTS FOR INTEGRATED WATER RESOURCE MANAGEMENT

In the midst of political unrest and revolution, Egyptian water delivery services were crippled by low tariffs that did not outweigh the high operational costs of utilities, regional water scarcity, centrally controlled capital investments, and water institutions overstaffed with poorly trained employees. The resulting institutional deficiencies caused anger among the general population. USAID and Chemonics International partnered on the Egypt Water and Wastewater Sector Support Program from 2008 to 2013 to strengthen the management of the water and wastewater facilities by increasing the operational performance and investment attractiveness of sector institutions, and to provide communities with cost-effective water delivery services. This was achieved by improving financial reporting, establishing subsidiaries in select governorates with modern financial management systems and long term tariff plans, creating capital investment plans and better budget allocation for improving water infrastructure, and training staff members. Recognizing high water prices as a central grievance among the population, the projects sought to reduce tensions between water users and service providers by strengthening the water management infrastructure and financial capabilities of water utilities in order to reduce water delivery costs (USAID WWSS 2013).

EXPAND AND IMPROVE LESS WATER INTENSIVE RURAL LIVELIHOODS

After gaining independence in 1990, Namibia's government established conservation as a national priority

when it became the first African country to include environmental protection in its constitution. In the developing economy, however, the primary industries of agriculture, mining, and tourism competed for limited land and water, which caused clashes between users and interest groups. In 1990, World Wildlife Fund launched a communal conservancy program, which sought to mitigate resource conflict by supporting sustainable resource management through ecotourism-based livelihoods and engaging more people in that sector. The program provided business training to professionals interested in conservancy and promoted local investment in ecotourism to increase employment and create new sources of household revenue (WWF 2013).

MANAGE WATER DEMAND BETWEEN OLD AND NEW RESIDENTS

After the Syrian revolution broke out in 2011, Jordan became a place of refuge for over a million Syrians by 2013. As the fourth most water deprived country in the world, tensions grew in host communities as Jordanians and Syrians vied over limited water supply. To address the increase in water demand, the 2006–2012 USAID-funded Mercy Corps-implemented Community-Based Initiatives for Water Demand Management (CBIWDM) project was extended to a second phase in 2013. CBIWDM II scaled up operations in communities throughout northern Jordan where many Syrian refugees had settled. Through community-based organizations the project micro-finances the installation of small-scale water supply technologies such as household and

Women and children crowd around a water point at dusk, in Mingkaman, South Sudan on January 8, 2014. A lack of water for the thousands who have fled to the Awerial region has left many to collect water from the Nile River. (Photo by Nichole Sobecki, AFP ImageForum)

communal rainwater catchment systems. Renovation of municipal water distribution lines also reduces leakages and improves efficiency. To explicitly prevent conflict between refugees and hosts, Syrian and Jordanian community leaders receive conflict management training so that they are equipped to identify and intervene to address water tensions before they escalate (Mercy Corps 2013).

INVOLVE COMMUNITIES WHERE PUBLIC INFRASTRUCTURE IS BEING CONSTRUCTED

The economy of the Burgondu village in the Kadamjai region of Kyrgyzstan depends heavily on agriculture, which relies on a makeshift canal off of the Soh River. In 2004, a water user association (WUA) was created to resolve problems managing water shortages and inefficiencies in the irrigation system. However, conflicts between water users persisted as a result of perceptions regarding the inequitable distribution of water from a low-cost, annually-constructed dam. The USAID Water Users Association Support Program helped build the WUA's capacity to mitigate conflict by improving decision-making and financial transparency and by also providing technical assistance and resources for the WUA to construct a permanent diversion dam. The completed dam benefited 1,800 residents, with farmers increasing their rice yield from 25–30 tons per hectare in 2007 and 2008 to 40 tons in 2009. The increase in agricultural water helped to reduce grievances by addressing livelihood insecurities and, in turn, reduced conflict over water resources (Winrock International 2009).

ADDRESS WATER-RELATED CONFLICT RISK THROUGH DEVELOPMENT PROJECTS IN OTHER SECTORS

In the Sheema district of Uganda, there has been longstanding conflict between the local government and residents over wetlands resources. The government evicted citizens from the wetland on the basis that they continued to practice illegal and environmentally damaging activities, such as tree cutting and brick making. The eviction angered residents because the sale of these goods was often their primary source of income. In 2003, Livelihood Improvement Programme of Uganda (LIPRO), a local NGO, sought resolution between the parties by providing training, information, and supplies to introduce more environmentally sustainable livelihoods, such as beekeeping and fish farming. LIPRO also worked with the local government to provide native tree species to community members for replanting and rehabilitation of degraded wetlands. Staff members from the local government assisted with the planting and preservation of the trees and became involved in regular committee meetings for local interest groups. The project reduced tensions in the long-term by improving wetlands management for multiple uses, supporting alternative livelihoods, and improving communication between communities and local government (Ruettinger and Täenzler 2011).

DEVELOP MECHANISMS FOR DIALOGUE AND SHARED RESOURCE MANAGEMENT

From 2010 to 2011 southern and eastern Ethiopia experienced the worst drought in sixty years. The water scarce conditions threatened an increase in water-related conflicts between pastoralists groups. Mercy Corps and USAID responded to the heightened conflict risk by implementing the Strengthening Institutions for Peace and Development (SIPED) project from 2009 to 2012. The project facilitated community dialogues on land and water scarcity, formed peace committees, and established agreements between conflicting parties to regulate use of scarce resources. When multiple communities were in conflict over the same resource,

In just six months, residents of Nawa village in Afghanistan went from collecting and carrying water every day to using clean, well-built communal taps near their homes. (Photo by USAID)

resource management was discussed and negotiated and the subsequent agreements were outlined in community peace accords. By November 2011, households in communities where SIPED was implemented were reportedly half as likely to face conflict-related barriers to water access (Kurtz and Scarborough 2012).

2 ENHANCE KNOWLEDGE AND CHANGE USER BEHAVIOR

BUILD CITIZEN KNOWLEDGE FOR IMPROVED LOCAL RESOURCE MANAGEMENT

Agriculture is an important sector for the Afghan economy. However, a legacy of war has degraded irrigation and watershed management systems in Afghanistan. Coordination between national authorities, operations and maintenance service providers, regulators, and local water users was often ineffectual. As reduced water availability contributed to food and livelihood insecurity, tensions rose between management institutions and farmers. In 2013, USAID and Perini Management Services, Inc. launched a 5-year countrywide Irrigation and Watershed Management Program to strengthen governance capacity at the national and local levels in order to build water supply and demand management and decrease vulnerability and frustration stemming from ineffective water governance. The program sought to strengthen water user knowledge and practices by fielding local trainers to improve community-level resource management, including on-farm instruction in sustainable irrigation practices (ICMA 2013).

A child fetches water at an improved water source in Kimatong, Eastern Equatoria, Southern Sudan. (Photo by Pact)

PROMOTE COLLABORATIVE MANAGEMENT OF LOCAL INFRASTRUCTURE

After 22 years of civil war, South Sudan emerged in 2005 without government institutions managing water supply or demand and with the population's access to safe water supply at a mere 14 percent. During the war, competition over water contributed to inter-community conflicts where water users, including women and children, were injured or killed to prevent them from accessing the scarce resource. These conflicts became more frequent between user groups like farmers and pastoralists during the dry season when water supply was insufficient to sustain livestock. To confront this problem the World Bank financed the Rural Water Supply and Sanitation Project (RWSSP) from 2006 to 2011. The project supported the setup of rapid water supply and sanitation service delivery in rural communities, developed a system for the Ministry of Cooperatives and Rural Development to monitor and evaluate the national sector plan, trained the technical, institutional, and financial staff of the rural water and sanitation department, and increased water data and information management. By 2010, access to safe water supply had increased to 34 percent of the population, directly benefiting 639,250 people. RWSSP also established technical guidelines and manuals for 14 Water, Sanitation and Hygiene (WASH) facilities and trained 518 WASH management committees to operate their facilities. These achievements sought to reduce inter-community water conflicts by increasing water supply and decreasing competition and to help build the government's capacity for managing water supplies to alleviate water access problems (World Bank Sudan 2011).

BUILD COOPERATION BETWEEN ADVERSARIES THROUGH ENVIRONMENTAL EDUCATION AND SHARED MANAGEMENT PLANS

The Good Water Neighbors project (GWN), initiated in 2001 by EcoPeace/ Friends of the Earth Middle East facilitates cooperative action to address cross-border disparities in water access and pollution, as these issues have led to anger and frustration among Jordanian, Palestinian, and Israeli communities. Through multi-level community education programs with youth, adults, and professionals, the Palestinian village of Wadi Fukin and the Israeli community of Tzur Hadassah built a common understanding of their shared spring system and the critical need to protect it. The two communities initiated collective activism to combat environmentally harmful government policies and to implement a joint watershed-based land use plan. Together, they were able to resolve many collective environmental issues and foster improved relations with each other. The GWN project has helped attract over US$400 million of investment in GWN community activities and it continues to serve as an international model for using water as a tool for peacebuilding (FOEME 2013).

MAXIMIZE WOMEN'S ROLES IN WATER CONFLICT RESOLUTION

At the conclusion of the civil war in the Democratic Republic of Congo, the Swima and the Ihua communities both experienced the strain of water scarcity and consequent allocation disputes between these watershed riparians threatened to turn violent. From 2003–2007, Tearfund worked in the Swima village to establish a water user association, Committee for Clean Water (Kamati ya Maji Safi, or KMS), to rehabilitate and develop community water infrastructure. Since women held the primary roles in domestic water collection and management in these

communities, KMS mandated 3 of the 7 members of the management team be local women. Female representatives from Ihua and Swima collaborated to plan the extension of a piped water scheme between their villages in order to increase water access for residents. After the initial women-led discussions, men were incorporated into the design and implementation process to ensure whole-community buy-in. When the extension was successfully completed the women continued to collaborate in similar ways and expanded water services in partnership with other nearby villages: Abeka, Mukwezi, and Munene (Burt and Keiru 2013).

MITIGATE RISK OF CONFLICT THROUGH IMPROVED EARLY WARNING AND RESPONSE SYSTEMS

In 2002, USAID and the Intergovernmental Authority on Development developed the Conflict Early Warning and Response Mechanism (CEWARN) for Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, and Uganda. The system sought to mitigate and prevent violent conflict through a collaborative conflict preparedness system that empowers government and non-government stakeholders to respond to and share information on potential issues. CEWARN operates at a regional level with a Committee of Permanent Secretaries, a Technical Committee on Early Warning, and an administrative office. At a national level, CEWARN units are placed in relevant ministries and National Research Institutes. At a local level CEWARN works with local committees and field monitors. This program has contributed to resolving a number of conflicts in the region. For example, violence over resource allocation between the Borana and Gabra communities in southern Ethiopia and northern Kenya escalated in 2005 after new government administrative units were created. The conflict resulted in the massacre of 75 Gabra

and the Borana were blamed. This helped fuel years of fighting, pastoral banditry, and shoot-outs between the communities. In 2009, local peace committees were established through the CEWARN initiative and these committees adopted a resource sharing agreement to improve stability and sustainable peace between the conflicting parties. The agreement concluded with the water-scarce Borana people granting the Gabra community access to their grazing land in exchange for water from the water-abundant Gabra territory. Following the agreement, there have been no further reports of theft between the communities (USAID 2009).

3 WATER AS A TOOL FOR PEACEBUILDING

IMPROVE INCLUSION THROUGH COMMUNITY CONSULTATION AND INFRASTRUCTURE DEVELOPMENT

Violent conflicts often occur in rural communities in Yemen over the management and distribution of the country's scarce water resources. For example, in the Ataq District of the Shabwa governorate, water distribution had been a key point of tension between community members, as the old supply network did not service migrant families. To address these types of issues, Partners for Democratic Change (PDC) launched the Community-Based Conflict Mitigation Program in 2009. The program created 10 local commissions of trained community mediators who were in charge of identifying and mediating conflicts between members of their communities. In the Ataq District, the commission convened stakeholders to discuss local disputes over water and potential solutions. The parties proposed improving equitability of access by restructuring the water distribution system and extending pipelines to include new households. As part of its objective to

build sustainable solutions to conflicts, PDC financed the local infrastructure plan in order to more equitably service the community's growing population (Partners for Democratic Change 2012).

EXTEND PEACE DIVIDENDS TO REMOTE AREAS

When rebuilding after the second Iraq war, communities in the Iraqi marshlands were faced with the challenges of upstream water diversion, wetlands degradation, a lack of safe water and sanitation, destroyed livelihoods, and a high level of distrust towards domestic and international organizations. To reverse these effects, the United Nations Environment Programme (UNEP) implemented the Iraqi Marshland Project from 2004–2008, which provided relief and social services to the communities impacted by the conflict, increased water supply with distribution pipelines and common taps, and researched sustainable tactics to re-flood and restore dried areas of the marshlands. The project reduced frustrations and anxieties of local communities, became a beacon of good news amidst the destruction of war, and helped 25,000 people in rural communities gain access to safe drinking water. Increased access included internally displaced persons who, due to the projects outcomes, gained the confidence they needed to return to their villages in the marshlands. In addition, the project collaborated with various Iraqi government ministries to provide an early response to the communities' needs in order to restore trust between the people and their public authorities (Weinthal, Troell, and Nakayama 2013).

IMPROVE PUBLIC RELATIONS WITH POLICE AND SECURITY FORCES

In 2009 the World Bank estimated that in the previous 15 years the West African region witnessed 70 percent of the military coups in Africa. In the region in general, there is a persistent relationship of distrust between civilians and militaries due to the history of oppressive, interventionist, militarist regimes. In contrast to its neighbors, Senegal stands out as an example of how a civilian-military relationship can be positive in developing the country. The Armee-Nation project was created soon after Senegal's independence in 1960 and has since served to protect citizens through many different types of collaborative development projects. The military's work on water infrastructure has promoted positive civilian-military relations and has helped communities more effectively use scarce water supplies. Projects include waste treatment facilities, canals, wells, lakes, and water retention basins for agriculture. The consistency of these civilian-military projects since Senegal's independence has helped not only to reduce the risk of conflict over water access but also to manifest citizen trust and respect for security forces (Partners for Democratic Change n.d.).

REBUILD COMMUNITY RELATIONSHIPS WITH GOVERNMENT AND SERVICE PROVIDERS

In 1996 the Government of the Philippines and the Moro National Liberation Front signed a Peace Agreement to end a multi-decadal conflict. The Agreement included a provision for development of basic economic and social infrastructure in the poorest and most conflict-ridden areas of Mindanao. The World Bank's Special Zone for Peace and Development project was designed to fast-track immediate development activities. A Social Fund was set up for quick financing and water supply and sanitation was designated as one of several focus areas for the fund. Localized financing helped target funding to communities most in need and at risk of conflict recurrence. Most importantly, the community-driven development model and quick implementation in the most impoverished locations helped to

BOX 3: Want to know more?

The following print publications and websites provide additional practical recommendations and ideas from real-world cases.

Gehrig, Jason, and Mark M. Rogers 2009: *Water and Conflict: Incorporating Peacebuilding into Water Development.* **Catholic Relief Services. Available online at: http://www.crsprogramquality.org/storage/pubs/ peacebuilding/waterconflict.pdf**

Provides conceptual information and practical guidance on the integration of water and peacebuilding in project programming.

Ruckstuhl, Sandra 2012: *Conflict Sensitive Water Supply: Lessons from Operations.* **The World Bank: Social Development Working Papers No. 127. Available online at: http://www-wds.worldbank.org/external/default/ WDSContentServer/WDSP/IB/2012/05/04/000386194_20120504022133/Rendered/PDF/685090NWP00PUB 0l0development0papers.pdf**

Explores the lessons learned from World Bank-led water projects in conflict-affected, fragile, and violent areas.

Roberts, Ellie and Lynn Finnegan 2013: *Building Peace Around Water, Land and Food: Policy and Practice for Preventing Conflict.* **Quaker United Nations Office. Available online at: http://www.quno.org/geneva/pdf/ economic/QUNO%20peace%20water%20land%20and%20food%202013-1.pdf**

Reviews policy and legal mechanisms, including five case studies, for preventing and resolving conflict related to natural resource governance.

Weinthal, Erika, Jessica J. Troell and Mikiyasu Nakama (eds.) 2014: *Water and Post-Conflict Peacebuilding.* **Routledge.**

Contains nineteen case studies exemplifying the role water can play in a post-conflict situation to facilitate or undermine peacebuilding.

USAID Global Water for Sustainability Program. Information available online at: http://www.globalwaters.net/

Summarizes information on a consortium of water supply, sanitation, and hygiene (WASH) services, water management, and building local capacity projects financed by USAID.

UNESCO International Hydrological Programme "From Potential Conflict to Cooperation Potential." Information available online at: http://www.unesco.org/new/en/natural-sciences/environment/water/ihp/ ihp-programmes/pccp/

Presents examples of projects focused in multi-level and interdisciplinary dialogues that promote cooperation rather than conflict over the management of shared water sources.

United Nations Development Programme — United Nations Peacebuilding Support Office. "Peace Dividends and Beyond: Contributions of Administrative and Social Services to Peacebuilding." Information available online at: http://www.un.org/en/peacebuilding/pbso/pdf/peace_dividends.pdf

Presents evidence in support of including administrative and social services amongst the menu of choices available to directly support peacebuilding in any given context.

United Nations Environment Programme — Disasters and Conflict Sub-Programme. Information available online at: http://www.unep.org/disastersandconflicts/

Demonstrates methods to alleviate potential environmental harm in disaster and conflict situations with research publications, general information, and program options.

Natural Resource Management and Development Portal. Information available online at: http://rmportal.net/

Collection of resources to be distributed among natural resource networks to foster open communication on available information, projects, media, etc.

USAID and The Mountain Institute survey changes in highland pastures to better understand the risk of conflict in the Ancash region of Peru. With the loss of one-third of the glaciers of the Cordillera Blanca, and as highland temperatures increase and precipitation becomes more erratic, the ecosystem upon which people depend is increasingly endangered. (Photo by Cynthia Brady, USAID)

rebuild communities' trust in government and their development partners (World Bank 2003).

INTEGRATE SERVICES FOR CONFLICTING PARTIES

Prior to the Bosnian War, the city of Mostar was serviced by a single utility, Mostar Water Supply and Sewerage Utility. After the war, extensive water infrastructure damage and ethnic division led to the establishment of two separate water service providers—one for the western Croat portion of the city and one for the eastern Bosniak side. International agencies helped increase the supply of water after the war but the challenge for recovery and long-term development was larger: reintegration. The World Bank's Mostar Water Supply and Sanitation project (2000–2004) assisted with the reintegration of the utility through institutional capacity building and rehabilitation of distribution and sewerage networks. Uniting

the water system allowed residents of the city to rely on the same system for the first time since the war concluded, receive the same services, and pay the same water tariff. As a unique peace-building mechanism, the reintegration of the utility acted as a preliminary step in reducing division between the eastern and western parts of the city and built momentum for reintegration in other sectors of the economy and governance systems (World Bank 2005).

BUILD RELATIONSHIPS THROUGH TECHNICAL INNOVATION

In 1981, the USAID-Middle East Regional Cooperation Program began funding collaborative scientific innovation to promote a less hostile relationship between Israel and its neighbors in the region: Egypt, Jordan, Lebanon, Morocco, Tunisia, and the West Bank. One successful initiative under the Program involved scientists from Israel,

Jordan, and the West Bank. This group of innovators developed safe and effective protocols for reclaimed wastewater olive irrigation systems, which helped reduce the agricultural burden on scarce water resources while allowing farmers to produce this important cash crop. This endeavor sought to encourage constructive relationships between technical specialists with the long-term objective of establishing more efficient water usage and less water-intensive livelihoods in the area (USAID 2012b).

BUILD RELATIONSHIPS BETWEEN COUNTRIES THROUGH RIPARIAN DATA SHARING

Ethnic disputes underlie tensions in the Caucasus region, as seen in the territorial conflict between Armenia and Azerbaijan over the Kura-Araks Basin in the Nagorno-Karabakh region. Specific disagreements over water between countries in the basin grew more prevalent as a result of ineffective water data and information management, which contributed to the inequitable distribution of water between countries and increased pollution of shared water resources. From 2001–2008 USAID launched the Water Management in the South Caucasus and the South Caucasus Water programs. These programs sought to strengthen national and transboundary water management capacities through improved data management, water quality monitoring, and technical staff training for water management institutions.

Due to the Armenian government's commitment to water sector development, the project began with a focus on building water management capacity among national authorities. In 2005 the project expanded to include two sub-basins — the Alazani Basin and the Khrami-Debed Basin — where overall tensions were less acute, in order to boost the countries' confidence in cooperating with one another. Strengthening Armenia's institutions

before initiating regional cooperation helped to ensure that capacity was in place and thus improve the program's peacebuilding potential. By the end of the program, there was marked improvement in cross-boundary dialogue on shared water resources management (Vardanyan and Volk 2013).

4 MONITORING AND EVALUATION IN CONFLICT-AFFECTED ENVIRONMENTS

Peacebuilding evaluation practice has grown considerably in recent years. Today, a number of excellent resources exist on the topic, with significantly more rigorous evaluations being conducted and with greater international consensus on best practice in peacebuilding evaluation than was the case even a decade ago.[1] In 2012, for example, the Organization for Economic Cooperation and Development's Development Assistance Committee (OECD-DAC) released *Evaluating Peacebuilding Activities in Settings of Conflict and Fragility*, which provides step-by-step guidance on evaluation, as well as some basic principles of program design and management. Practitioners designing or managing evaluations for projects that relate to water and conflict should consult this guide in tandem with the USAID Evaluation Policy (2011). In addition to emerging norms and learning around peacebuilding practice and rigorous performance evaluation, there

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1. See among other resources Gaarder, Marie and Jeannie Annan 2013: "Impact Evaluation of Conflict Prevention and Peacebuilding Interventions," World Bank Policy Research Working Paper 6496, Washington, DC: The World Bank. Blum, Andrew 2011: "Improving Peacebuilding Evaluation: A Whole-of-Field Approach," Special Report, U.S. Institute of Peace, Washington, DC; Blum, Andrew and Melanie Kawano-Chiu 2012: "Proof of Concept: Learning from Nine Examples of Peacebuilding Evaluation," U.S. Institute of Peace & Alliance for Peacebuilding, Washington, DC; Learning Portal for Design, Monitoring, and Evaluation of Peacebuilding. Available at http://dmeforpeace.org/.

A man operates pipe infrastructure in Iraq. (Photo by UDAID/Iraq)

is also increased attention to and use of impact evaluations, including randomized control trials as well as other quantitative and mixed methods approaches.

There is not enough space in this toolkit to adequately address this topic but the following highlights may be useful to consider.

MONITORING

Project monitoring is first and foremost a management tool. If a project could be affected by conflict dynamics or vice versa then conflict dynamics are a concern of management. Most water projects occurring in conflict-affected and fragile states (and situations) should be monitoring for conflict at some level. This monitoring is generally accomplished through collection of data linked to specific indicators. A first step, therefore, is to conduct a conflict assessment or conflict analysis tied to the water project.

A second step is to identify and collect data on conflict-specific indicators that will help project managers understand the changing conflict dynamics. This may take the form of *context indicators*, which are indicators that do not directly correspond to any expected inputs, outputs, or outcomes from the project but could affect its implementation in some way.

The third step is to understand how the project interacts with those conflict dynamics, which may require customizing other project indicators linked to water access, quality, or quantity. For example, if a goal of the project is to increase the number of people with access to water, do we know the identity of those people in the terms that relate to the conflict, such as ethnicity, religion, political affiliation, or gender? In a country like Iraq, for instance, a water project where 80 percent of the beneficiaries are Sunni Arabs living in rural areas has a different relationship to conflict dynamics than one that is

more evenly divided by Sunnis, Shias, and Kurds. A final step, appropriate in cases where peacebuilding or conflict sensitivity are explicit components of the project design, is to design and collect data on conflict-specific *performance indicators*. These might be measures of grievance or social cohesion, cooperation, dispute resolution, violence, or some other focus area that the project aims to influence through water-related activities.

EVALUATION

The OECD-DAC identifies a number of key steps in preparing an evaluation, beginning with defining its purpose. Accountability and learning are two of the most common criteria, although there can be others as well. Challenges in peacebuilding evaluation often stem from issues in the design of a project— for example, lack of clarity around the theory of change or confusion between conflict-sensitivity and peacebuilding. Determining the scope of evaluation, deciding on evaluation criteria, and outlining key evaluation questions are all critical steps. Selecting an appropriate evaluation approach and methodology is also important and should

be undertaken with reference to the USAID Evaluation Policy. Both performance evaluations and impact evaluations can be useful but they serve different functions and imply different logistical and timing considerations. In some cases, a mixed methods approach may be suitable, and in other cases it may be necessary to account for complex causal logics in the evaluation itself. Security concerns linked to the project, communities, and evaluators must also be carefully considered. Security constraints may have major impacts on logistics, budgets, and ultimately, the feasibility of different approaches. In deciding how to manage the evaluation, one practical step that USAID missions can take is to create a structure for cross-sector design and management of the evaluation involving both conflict and water specialists.

Sources: OECD-DAC *Evaluating Peacebuilding Activities in Settings of Conflict and Fragility.* See http://www.oecd.org/dac/evaluation/evaluatingconflictpreventionand-peacebuilding.htm for this and other resources. Also see *Saferworld: Conflict-sensitive approaches to development, humanitarian assistance and peacebuilding: Tools for peace and conflict impact assessment,* available at http://www.saferworld.org.uk/downloads/pubdocs/chapter_3_module_3_conflict_sensitive_monitoring__414.pdf. See also the USAID Evaluation Policy (2011) and other materials from the USAID Office of Learning, Evaluation, and Research (PPL/LER).

PART 4:
RAPID APPRAISAL GUIDE

Residents in Rajasthan, India, fill up at a harvesting structure, which has made water readily available for drinking, agriculture, and sanitation during the dry season. (Photo by Jal Bhagirathi Foundation)

This Rapid Appraisal Guide has been designed to assist development practitioners as they seek to identify factors that could trigger or escalate conflict and to determine peacebuilding and resilience-strengthening opportunities associated with water programs. To help inform all phases of the program cycle, the guide is divided into two sections: a list of general considerations and a set of more specific lines of inquiry.

1. CHECKLIST OF GENERAL CONSIDERATIONS

This section outlines a series of basic factors to frame a conflict-sensitive approach to water programming. These considerations may help practitioners identify specific areas that require further in-depth inquiry or analysis and to organize information collected through interviews, assessments, or literature reviews.

2. GUIDING QUESTIONS

This section lists key questions that

evaluate the risk of conflict related to water. These questions should help practitioners effectively integrate water management and conflict prevention and mitigation into their programs. Not all questions will be relevant to each case or region due to natural, historical, sociopolitical, and cultural differences. The questions are organized around several themes, which are not meant to be exhaustive but are illustrative based on broader guidance contained in this toolkit as well as the CAF 2.0.

1 CHECKLIST OF GENERAL CONSIDERATIONS:

✓ CONTEXT-SPECIFIC INTERVENTIONS

It is imperative to understand the local specificities of the relationship between water and conflict, particularly with respect to socioeconomic, cultural, historical, and political dynamics in a given country or location. Successful programmatic interventions from other countries can be informative and help-ful in designing new program options but can seldom be copied directly from one context to another. The design of programmatic interventions must flow from local realities and dynamics.

✓ POLITICALLY STRATEGIC INTERVENTIONS

Historically, water issues have primarily been approached as technical or legal problems. However, the complexity and sensitivity of water issues demands well-designed programmatic interven-tions that can operate successfully within relevant cultural, political, and economic settings. Political buy-in from national and local government and other key stakeholders is often essen-tial. Accordingly, the processes relevant to designing and implementing water interventions are often as important as the sectoral outcomes (e.g., the "how" can matter more than the "what" in a conflict setting). Moreover, the people or organization(s) chosen to lead and participate in an intervention can be critical to gaining or losing political and community buy-in and sustainability.

✓ TIMING AND SEQUENCING

First, determine whether any urgent issues must be addressed immediately in order to prevent imminent violence and conflict. Then, medium and long-term needs should be identified — and the two timescales of intervention should be connected. Often, short-term interventions can strategically address immediate problems while building the knowledge and political buy-in required for longer-term change. At the same time, practitioners should be mindful of the longer-term implica-tions of any short-term interventions. For example, is the program resistant to the impacts of climate change? Will it be supported if there is a change in government? Addressing structural and systemic water issues that can precipi-tate violence will often require a long-term commitment of assistance.

Be aware that unmet expectations or initiating or terminating water interven-tions at an inappropriate moment can actually trigger conflict. Furthermore, reforms or interventions attempted out-of-sequence and lacking an enabling environment may also fuel conflict. When used to support a peacebuild-ing process, water-related initiatives can serve to address known grievances or build confidence and trust between key parties, such as, when supply is improved at critical times or when cooperative relationships are fostered between adversaries.

✓ INDICATORS OF CONFLICT OR COLLABORATION

Practitioners should be on the lookout for signals that water-related tensions are growing or changing. Crucial early warning indicators may include: increases in illegal pumping or water supply

Successful programmatic interventions from other countries can be informative and helpful in designing new program options but can seldom be copied directly from one context to another. The design of programmatic interventions must flow from local realities and dynamics.

diversion, increases in the number of water disputes, increased reporting of environmental degradation, unregulated (or unenforced regulations on) individualized water use, unwillingness or inability to invest in water use or monitoring infrastructure, small-scale violence at water points and destruction of water infrastructure, or increased inflammatory rhetoric about water-related issues within political discourse. On the other hand, indicators of collaborative ripeness and water-related peacebuilding potential include: stakeholder interest in exercising good practice in integrated water resource management, water users' willingness to collaborate with each other in the context of broader conflict, and public support and positive press for policy reform that would change the status quo, for example water demand management.

✓ LEVEL OF INTERVENTION

Armed conflict is a complex system that generally has deep historical roots and effects that continue to reverberate long after the signing of a peace accord. The long-term process of peacebuilding is dependent upon achieving meaningful and complementary changes at both the national and the local levels, and at both the personal and institutional levels. Meanwhile, water-related interventions occur within this system, and no single project is able to address everything. Project designers and managers must therefore make strategic decisions in order to leverage the impact of their results. Should the activities focus on the national or local levels? Should they target responsible water management institutions or the behavior of users? If both, in what sequence or with what presumed theory of change? And with what relationship to the activities of other projects and international actors? Answering these questions helps practitioners measure impact and plan for results more strategically.

Armed conflict is a complex system that generally has deep historical roots and effects that continue to reverberate long after the signing of a peace accord.

✓ GOVERNMENT BUY-IN

Government buy-in is essential for most programmatic interventions, especially those affecting law, policy, or government agencies. As programs are being designed it is useful to consider if the necessary political will exists, at which levels and within which institutions it might exist, and if and how political will can be generated or sustained at appropriate levels. Are there ways to take smaller initial steps to build confidence and buy-in from key government actors while laying the foundations for longer-term and broader reaching interventions? When considering the potential impact of government buy-in, practitioners could also survey public perceptions of institutional effectiveness and legitimacy.

✓ KEY ACTORS AND STAKEHOLDERS

Practitioners should consider the critical actors or stakeholders other than government (and neighboring governments in the case of transboundary systems) who have an interest in the water resource that is implicated in the project. Ignoring the interest of key stakeholders, informal authorities, and power brokers runs the risk of generating conflict, undermining sectoral development objectives, and blocking or inhibiting constructive developments in the future.

✓ LOCAL CAPACITIES

Practitioners should consider whether there is sufficient local capacity to support the proposed development interventions. Human resources, technical and administrative skills, and infrastructure support or equipment are often lacking in key areas such as legal services, engineering, or water resource mapping. This can inhibit project success and potentially fuel social grievances, particularly in cases where citizens perceive the state as incapable of effectively and legitimately supporting development interventions. Identify capacity and

logistical limitations early, before they become unexpected constraints or lead to unmet expectations and so they can be rectified through the project.

☑ **DONOR COORDINATION**

In many countries, multiple donors support water-related interventions through various development tracks (from health to agriculture to energy), making organizational coordination a priority. Close coordination among and between development actors and the host government as well as key water resource management institutions (inside or outside of government) is also essential to ensuring integrated and sustainable resource management as well as conflict-sensitive implementation. Uncoordinated planning can result in biased, ineffective, or counter-productive infusions of resources and technical support that complicate the resolution of conflict dynamics. Connecting with water-coordination groups or a water focal point is a good starting point for gathering relevant information.

2 GUIDING QUESTIONS:

Five basic questions address the likelihood of water-related conflict:

• Do two or more parties hold competing claims on a water resource? Does an unequal power relationship exist between the parties?

• Do water-sharing parties belong to different groups of society? Do tensions unrelated to water exist between these groups?

• Are water management mechanisms effective, enforced, and perceived as fair?

• Is lack of water, flooding, or water resources development impacting health, depriving people of their livelihood, or forcing them to migrate?

• Do water management institutions and relevant populations have the capacity to adapt to situations of water variability (scarcity and abundance)?

Water floods the road after an air strike by pro-government forces hit a water pipeline in the Syrian city of Aleppo on November 28, 2013. (Photo by Mohammed Al-Khatieb, AFP ImageForum)

IDENTIFYING SOCIAL AND INSTITUTIONAL PATTERNS OF GRIEVANCE AND RESILIENCE

User Access

Who has secure and reliable access to water? Is any party directly or indirectly denied access to water in sufficient quality and quantity? If so, do affected social groups perceive this limitation to be a deliberate manifestation of a discriminatory policy? What is the relationship between groups with differential water access?

Are one party's changes in water quality, quantity, or flow inhibiting water use by another party? Has man-made water scarcity or degraded water quality decreased water availability and increased the impact on the environment or human health?

Are water users highly dependent on the particular water resource in question or can their needs be fulfilled by other means?

Who has access to equipment or treatment options that help improve water access or quality (e.g., drills, pumps, irrigation equipment, filters, disinfectants)? Who has access to water infrastructure (e.g., dams, canals, cisterns) for domestic purposes and for income purposes? Who does not have these types of access and why not? What are the consequences of different levels of access on the different user groups?

Who has access to data and information about water resources, infrastructure, and regulations? How do they get the information? Is it trusted?

Water Governance

Are water allocation mechanisms and systems of water permits enforced? Are they perceived as fair and transparent?

What are the formal and informal institutions that manage water? What are their respective roles technically and in terms of conflict management? How do they collaborate or conflict? Are the services they deliver considered effective and by whom?

Do institutions equitably mediate competing claims for water access, social and environmental impacts, and benefit sharing?

Are there international mechanisms to enhance governance of transboundary water resources? Are such mechanisms adopted, implemented, and enforced? If so, at what levels?

Do national and local water management institutions have sufficient human and technical capacity to develop and enforce comprehensive water management plans?

Does a reliable database exist and, if so, is it accepted by all water-sharing parties? Is information shared among water-using parties?

Are contradictory decisions in water-related issues made by different institutions (agriculture, fishery, regional development, etc.) or on different levels (local to regional)?

Have all groups (including local communities and indigenous groups) with legitimate interests, facing serious impacts, or holding formal and informal access rights, been identified and recognized?

Are these groups able to participate in management and development policy? Has the negotiation capacity of weaker groups been strengthened?

Are water resources perceived to be allocated according to political motivations or patronage?

Do benefits from water-related development accrue to a particular identity group, economic class, or region? Have stakeholders been appropriately consulted and compensated?

Conflict Damages and Recovery

Have water resources, infrastructure, or institutions been targeted and *intentionally* damaged or obstructed by anyone? By whom? Why? When? Who was impacted? What were the consequences?

Have water resources, infrastructure, or institutions been *unintentionally* damaged by anyone during a conflict (e.g., collateral damage during armed violence) or as the result of protest? How? By whom? Who was impacted? What were the consequences?

Have water resources, infrastructure, or institutions contributed to reconciliation or peacebuilding activities in a post-conflict context? How and why? Who were the key stakeholders and what were their roles during the conflict?

Have water resource governance mechanisms, such as user groups or emergency flood management plans, functioned effectively despite a context of conflict or violence? How did they resist or manage the effects of conflict? Which institutions and identity groups were relevant?

ACCOUNTING FOR EMERGING ISSUES AND TRENDS

Considering population growth and population movements, is there adequate water infrastructure and supply for all users? Which locations will have an infrastructure or service gap? Who will be most impacted by the gap? What is currently being done to bridge that gap?

Considering the potential for natural disasters, how could water availability, quality, and access be affected by future events? Which groups are most vulnerable to those impacts and which groups are best prepared to cope with the risks? Which institution(s) is responsible for risk reduction and what are the public perceptions of its effectiveness and legitimacy?

How does current climate variability impact water resources? What are the anticipated impacts from climate change on water resources? Who will be impacted by this? How are people, governance institutions, and infrastructure responding to these changes? How could they adapt better to reduce insecurity and risk of conflict?

Who are the riparians to the water resources that are outside of local or domestic jurisdiction, including international? What impact have they had on water availability and quality within the specified jurisdiction? How has this contributed to tensions, conflict, or peacebuilding at various levels (if at all)?

Which exported economic products require a significant amount of water for production? Who earns income in this market? How does that production impact water access for other users who share the water resource? Who makes decisions about water allocation? What are riparian perceptions of those decisions?

UNDERSTANDING KEY ACTORS

Considering the potential sources of grievance discussed above, who could mobilize groups to express discontent related to water issues? Who could mobilize groups to collaborate peacefully around water resource management?

How would they mobilize people (unifying the groups, organizing activities, financing initiatives)? What would their motivations be for mobilizing people? Who would that mobilization affect?

Are the motives of the mobilizers the same as those of the recruits? What are those motives?

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U.S. Agency for International Development
Office of Conflict Management and Mitigation
1300 Pennsylvania Avenue, NW
Washington, DC 20523
Tel: (202) 661-5810
Fax: (202) 216-3454
www.usaid.gov