

Integration of Water, Sanitation, and Hygiene (WASH) and Freshwater Conservation:
Overview and Background, Case Studies, and Enabling Conditions

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I. Executive Summary

The objective of this report is to advance the projects and partnerships of Coca-Cola's Global Water Stewardship work to have greater impact and contribute to the realization of Sustainable Development Goal (SDG) 6. Specifically, this report focuses on community water, sanitation and hygiene (WASH) and freshwater conservation (FC) projects, and assesses the motivations, benefits and challenges to integrate these projects, as well as the enabling conditions that support their integration. Building off of the groundbreaking work of the Africa Biodiversity Collaborative Group (ABCG), this report is also intended to contribute to the research on integration more broadly and support further integration of WASH and freshwater conservation efforts.

At a high level, ABCG defines integrated (or multi-sectoral) projects as those which “combine health interventions with conservation activities, creating synergies and greater conservation and human well-being outcomes than if they were implemented in single-sector approaches.”¹ Interviews and a review of integrated project case studies revealed there are three key factors to classify integration: (1) project origin, (2) primary objectives, and (3) interdependence.

This report applies these classifications to 17 example projects. This classification is important to identify how the motivations of a community or an implementing organization to pursue integration can contribute to the work's success, as well as to build the case for integration because parallels can be drawn between past examples and future scenarios.

Aside from SDG 6, there are various policies, institutions, and research at the international, regional, and national level that enable integration of WASH and freshwater conservation either by providing the legal framework, implementing power, or evidence base to support it.

WASH and freshwater conservation organizations have distinct motivations to integrate and also identify different benefits and challenges. Gathering this evidence from WASH and freshwater conservation practitioners not only builds the case for further integration, but also identifies specific barriers that can be addressed in the future to design and implement successful integrated projects. Finally, assembling a set of enabling criteria for integrated projects, while not prerequisites or requirements for success, serve to assist funders and practitioners in both the WASH and freshwater conservation communities when evaluating a project's potential for integration.

¹ Edmond, J., Sorto, C., Davidson, S., Sauer, J., Warner, D., Dettman, M. and Platt, J. 2013. p.6. [Freshwater Conservation and WASH Integration Guidelines: A Framework for Implementation in sub-Saharan Africa](#). Washington, D.C., USA: Africa Biodiversity Collaborative Group, Conservation International, and The Nature Conservancy.

II. Introduction

The objective of this report is to advance the projects and partnerships Coca-Cola implements as part of its Global Water Stewardship work to have greater impact and contribute to the realization of Sustainable Development Goal (SDG) 6. Specifically, this report focuses on community water, sanitation and hygiene (WASH) and freshwater conservation (FC) projects, and assesses the motivations, benefits and challenges to integrate these projects, as well as the enabling conditions that support their integration. This report is also intended to contribute to the research on integration more broadly and support further integration of WASH and freshwater conservation work by both types of organizations.

A new focus on integration

For years, projects focused on WASH and freshwater conservation have mainly been designed and implemented separately. Moreover, they are typically addressed by distinct organizations that differ most markedly in their motivations.

On one hand, the WASH community is motivated by a human development objective. There is a demonstrated link between water, sanitation and hygiene and other development challenges such as health, nutrition, education, and economic stability.² Typical examples of WASH projects include water or sanitation infrastructure or hygiene behavior change (a more detailed overview of WASH is in Section III).

On the other hand, the freshwater conservation community is motivated by an ecosystem conservation objective. These organizations aim to preserve and restore ecosystems so they can sustain all forms of life, not just humans, and they recognize the mutually beneficial and mutually destructive links between people and nature. A healthy watershed is often the cornerstone of a healthy, resilient ecosystem, which is what leads these organizations to prioritize freshwater conservation.³

Both types of organizations have implemented successful projects independently, but there is a growing recognition that in order to have a greater and more lasting impact, WASH and freshwater conservation goals should be integrated in projects that address both. The most significant recognition of this need is in SDG 6, which builds on the successes of the Millennium Development Goals (MDGs) which concluded in 2015. Given the unmet targets of the MDG on water and sanitation and the increasing importance of ecosystems to adapt to climate change, SDG 6 is a development goal focused on water that calls for integration of WASH, freshwater conservation, and other aspects of water resource management. For more about SDG 6 and other policy and institutions that support and enable integration, see Section IV.

² [WaterAid \(2012\) Water security framework](#). WaterAid, London.

³ ["Water: our rivers, lakes & wetlands..."](#) WWF.

Apart from the SDGs, additional evidence building the case for integration is the pioneering work of the Africa Biodiversity Collaborative Group (ABCG) on the integration of WASH and freshwater biodiversity conservation, funded by USAID's Bureau for Africa. This group has researched case studies of integration in Sub-Saharan Africa⁴, produced guidelines⁵ and a framework⁶ to support the design, implementation, and monitoring and evaluation of integrated projects, and is in the process of piloting the application of these tools with two demonstration projects and one existing project (see Section VII, Projects 4, 14, and the PHE project).

Members of this group also played a large role in organizing the WASH and freshwater conservation sectors to encourage the creation of an integrated SDG that prioritized freshwater conservation along with WASH, through the "Joint Statement on Water, Sanitation and Hygiene (WASH) and Freshwater Ecosystem Conservation."⁷ By outlining the variety of intersections between WASH and freshwater conservation, ABCG has also contributed to the growing evidence base that supports integration.

This report complements the work of the ABCG by providing a method of defining and assessing integration, sharing more examples of integration occurring outside of Africa, and capturing current reflections from implementing organizations to improve and shape integrated work in the future. For more detail on ABCG, see Section IV.

Coca-Cola's role in integration

Coca-Cola is a significant partner to implementing organizations in both the WASH and freshwater conservation communities as part of its Global Water Stewardship strategy. The company is a leader in corporate water stewardship and has more than 11 years of experience working with these organizations on both types of projects. Since 2005, Coca-Cola and its partners have invested more than \$300 million in community water access and freshwater conservation projects. The network of relationships the company has built with both types of organizations is large and growing, strengthened by mutual benefit and respect. This is most clearly demonstrated by Coca-Cola's partnership with World Wildlife Fund (WWF) since 2007, which is held up as a model for corporate and non-profit collaboration.

⁴ Bonnardeaux, D. (2012) [Linking Biodiversity Conservation and Water, Sanitation and Hygiene: Experiences from sub-Saharan Africa](#). Conservation International and Africa Biodiversity Collaborative Group. Washington, D.C., USA.

⁵ Edmond, J., et. a. (2013)

⁶ ABCG (2014). [ABCG freshwater conservation and WASH monitoring and evaluation framework and indicators - Draft](#). Washington, DC. Africa Biodiversity Collaborative Group (ABCG), United States Agency International Development (USAID).

⁷ "[Joint Statement on Water, Sanitation and Hygiene \(WASH\) and Freshwater Ecosystem Conservation](#)." WaterAid. 2015.

Both WASH and freshwater conservation work are very important to Coca-Cola's strategy and growth. Coca-Cola's largely non-export business model means that in many places they share sources of water with the same communities where they sell their products. Thus, it makes sense for Coca-Cola to partner with those communities not only to protect local water resources on which production depends, but also help ensure that the community is healthy and productive.

Both types of work are also very important to Coca-Cola's water stewardship strategy to return to nature 100% of the water used in production and its final product – the “replenish” goal. Freshwater conservation projects in particular protect and restore large volumes of water that contribute to approximately 95% of this target.

Coca-Cola has an incentive to understand and promote integration among its partners in order to implement projects that are more productive and yield a greater, more lasting impact. These projects in turn can make more significant contributions to the company's water replenishment and community goals. Moreover, as a global leader in water stewardship, Coca-Cola has a responsibility to further integration on a wider scale to contribute to the achievement of SDG 6.

The role of this research

Within its broader objective to contribute to additional integrated WASH and freshwater conservation work within Coca-Cola and the broader community, this research is intended to accomplish several key purposes:

1. Outline the different definitions and degrees of integration.
2. Share insights from both the WASH and freshwater conservation communities on the motivations to pursue integrated work as well as its benefits and challenges.
3. Highlight policy, institutions, and research that support and enable integration.
4. Provide an overview of the current landscape of projects and implementers that integrate WASH and freshwater conservation.
5. Develop a preliminary framework of conditions that identify likely barriers and help enable integration to assist organizations identify and prioritize projects that have the greatest potential for integration.

Building off of the work of the ABCG, this research intends to provide more examples of integration and to capture current reflections from implementing organizations to improve and shape integrated work in the future. It is intended to support not only the WASH and conservation organizations who design and implement these projects, but also the partners and funders in this space. For example, implementing organizations and funders alike can use this research to better understand the conditions that enable integrated projects to be successful.

Implementing organizations specifically can also use this research to help bridge the gap in integration understanding between policy-level and project-level practitioners, and share specific project examples among project-level practitioners. From the funder

and partner perspective, this research can help explain the benefits to integration and contribute to a stronger case for integration within their organizations. In addition, it can help these entities understand the support that practitioners in WASH and freshwater conservation implementing organizations need from them in order to be successful in implementing integrated work.

Research methodology and limitations

This research was carried out over the course of 10 weeks and included approximately 50 interviews with WASH and freshwater conservation practitioners. The approach was grounded in a desire to gather current examples of integration from organizations that have either attempted to or successfully implemented integrated work on the ground. The first organizations that were interviewed were those included in the Joint Statement,⁸ and from there additional organizations and case studies were recommended, ad hoc.

In general, integration of WASH and freshwater conservation specifically is a fledgling area of research and this work intends to provide more evidence of integration occurring in the field.

In addition, this research focuses primarily on organizations that implement specific *projects* that in most cases are implemented or supported by non-governmental organizations (NGOs). These projects are scoped and funded by a variety of sources, including private sector and government entities. In almost all cases, through these projects, the NGOs work directly with the local community and government actors responsible for water and environmental services in a community (e.g. Ministry of Environment, Ministry of Health, etc.). These organizations, whether WASH or freshwater conservation-focused, aim to develop the capacity of the local community and government to implement these strategies after the outside organization concludes the project.

It is important to highlight that in some cases, local governments are leading efforts to integrate WASH and freshwater conservation work independent of outside NGO assistance. A study of the work that is taking place at various levels within local governments is out of the scope of this report, but some examples are referenced at a high level in Section IV.

⁸ [“Joint Statement on Water, Sanitation and Hygiene \(WASH\) and Freshwater Ecosystem Conservation.”](#)WaterAid. 2015.

III. Defining WASH, Freshwater Conservation, and Integration

In order to ground a discussion of WASH and freshwater conservation integration, it is necessary to provide an overview of each type of work separately. The best summaries of these types of work are included within the introduction of the ABCG “Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines”⁹, excerpts of which are included here:

BEGIN EXCERPT:

“Water, Sanitation, and Hygiene (WASH)

The field of water supply, sanitation and hygiene is frequently referred to by its acronym, WASH, and focuses on the household and community scale. There is an implicit emphasis on health, with WASH activities intended to improve the health of household and community members. WASH programs are undertaken to address a number of key concerns, including public health, water quality and quantity, water source protection, drainage, and disease vector control.¹⁰ While WASH programs vary widely, there are a few core areas that capture a majority of the activities:

Community and household water supplies

- drinking water
- cooking
- bathing
- laundry
- cleaning
- gardens (horticulture, fruit trees, herbs)

Sanitation

- excreta disposal
- solid waste management
- storm water drainage

Hygiene promotion

- awareness raising and education
- behavior changes in personal and household
- hygiene practices

⁹ Edmond, J., et. al. (2013). pp. 5-6

¹⁰ This is defined as the control of the transmission of disease by pathogens or actors in the environment. Preventing disease through healthy environments: Towards an estimate of the environmental burden of disease. Geneva, Switzerland: WHO.

Given the importance of water to so many sectors, there are frequent opportunities to link WASH-related problems with other sectors. Two such areas are water for productive uses (potentially connecting with agriculture or livelihoods) and water for environmental sustainability (potentially connecting with ecosystem management). Productive uses of water include those that contribute to strengthening the livelihoods of project beneficiaries. Examples of relevant agricultural uses of water include small scale irrigation, animal husbandry and fish farming. Small industrial uses include activities such as brick-making and food processing. Water for environmental protection refers to activities which contribute to the environmental sustainability of water resources in the watershed. Examples include watershed management to recharge groundwater aquifers, prevent soil degradation, enable climate change adaptation, increase the biodiversity of plants and animals or improve the health and well-being of people.

Freshwater Conservation

Freshwater conservation efforts are designed to protect or restore freshwater biodiversity, ecosystems and ecosystem services. The term biodiversity refers to the variety of plants, animals and microorganisms and the ecosystems in which they occur. Ecosystem refers to a dynamic complex of plant, animal, and microorganism communities and the nonliving environment interacting as a functional unit (UNEP 2003). Ecosystem services are the benefits that people obtain from these systems, for example flood control or the provision of drinking water and food. Actions undertaken to achieve freshwater conservation goals are extremely diverse. Some common examples include:

- Design and implement effective watershed management plans to ensure sustainable watershed functions such as water supply, water quality, and improved drainage.
- Compensation through payment for ecosystem services (PES) programs by downstream water users like cities, agricultural growers' associations or hydropower companies. These payments are made to upstream communities and farmers whose land management practices influence the quantity, quality and sedimentation of the water.
- Application of environmental flow protection or restoration with water managers. This could include dam operators and urban water suppliers collaborating with environmental scientists to determine and then ensure the quantity and timing of water flows which are necessary to support functioning ecosystems.
- Protecting natural ecosystems to ensure they can continue to support water systems in times of change. Science has shown that we are going to feel the impacts of climate change in the form of extreme events, including more intense floods and droughts.
- Design, manage and enforce protected areas for freshwater biodiversity and freshwater ecosystem health.

Humans are integrally linked to the environment. WASH activities associated with conservation may integrate health objectives with watershed management approaches, as well as both rural and urban water supply and sanitation, which can reduce the impact of pollution on the watershed and freshwater species found within it. Though conservation efforts more traditionally intersect with WASH at the rural or community level, the rapid growth of towns and cities, increased water variability related to climate change, and water stress have increased attention on the upstream watersheds that filter and regulate urban water supplies.”

END EXCERPT

Defining integration

While the general fields of WASH and freshwater conservation are fairly well-understood by both communities, the concept of integration is more loosely defined and shaped by the training and expertise of each sector. The differing sector views and vocabulary of integration is discussed more extensively in Section V. At a high level, ABCG defines integrated (or multi-sectoral) projects as those which “combine health interventions with conservation activities, creating synergies and greater conservation and human well-being outcomes than if they were implemented in single-sector approaches.”¹¹

Interviews and a review of integrated project case studies revealed that while this broader definition of integration is accepted by both sectors, practitioners see value in many different variations and levels of integration. As such, a multi-faceted definition becomes necessary to review and analyze an integrated project. Through this research, three key factors emerged to classify integration:

Factor 1: Project Origin

This factor identifies the history of the project: whether it started as a separate project (Types 1 and 2) or whether it was integrated from the start (Type 3). This is useful to both classify and allow distinction as well as understand the original motivations of the project.

¹¹ Edmond, J., et. al. (2013). p. 6

Table 1. Project origin classification

1. Primarily WASH		2. Primarily FC	
<i>Definition: launched as a WASH project and may have potential to integrate secondary FC goals</i>		<i>Definition: launched as a FC project and may have potential to integrate secondary WASH goals</i>	
After launching the project it:			
a. Later integrated FC goals	b. Did not integrate FC goals	a. Later integrated WASH goals	b. Did not integrate WASH goals
3. Integrated			
<i>Definition: launched as a project that includes both WASH and FC goals</i>			

Factor 2: Primary Objectives

This factor is meant to identify whether the primary objectives of a project (after it is integrated) are more related to WASH, freshwater conservation, or if they are equally distributed between the two. It is important to note that a project can be integrated while still being based in either primarily WASH or primarily freshwater conservation objectives. This can be for several reasons, including the focus of the implementing organizations and their expertise, a past project in that location, or a donor preference. This distinction is useful for classification as well as to measure the extent of integration.

Table 2. Primary objectives classification

WASH	Equal	FC
Prioritizes WASH objectives	Equally prioritizes WASH and FC objectives	Prioritizes FC objectives

Factor 3: Interdependence

This factor is meant to identify the level of interdependence of the integrated project. It is a measure that is intended to communicate the value or necessity of integration. If a project was so interdependent that it would fail without integration, or if its success was greatly enhanced by integration, then the value of integration could be considered high. On the other hand, if a project was integrated on a more basic level because the two activities happened at the same time, even worked in tandem, but were not directly interdependent, the value of integration could be considered comparatively lower. However, integrated projects that do not exhibit interdependence still provide value, as we discuss in the next section.

Table 3. Interdependence classification

HIGH interdependence: most or all of the WASH components were critical to achieving the FC objectives or vice versa

SOME interdependence: some specific WASH components were critical to achieving some of the FC objectives, or vice versa

LITTLE to NO interdependence: the WASH and FC components had little to no bearing on each other

Making the case for integration

In general, interdependence (as explained in factor 3) is the most compelling justification for integrated projects because it highlights the necessity of integration to accomplish either WASH or freshwater conservation objectives. The ABCG report outlines several high-level examples of these linkages and how this interdependence can manifest:¹²

Water, poverty, and environment: “Water, poverty and environment are deeply connected. The poor are the most vulnerable to environmental risk factors such as unsafe water and climate change. Areas of high endemism¹³ and biodiversity, linked with an abundance of freshwater, are often remote. Human communities living in close proximity to these areas tend to be impoverished with little to no access to improved water sources and sanitation facilities.”

WASH and ecosystem resilience: “The sustainability of freshwater resources and safe drinking water projects depend on the appropriate conservation of the broader watershed. Protecting free-flowing river systems, intact wetlands, and groundwater recharge areas is also essential for maintaining ecosystem resilience and protecting WASH infrastructure against the impacts of natural disasters and climate change and variability.”

Sanitation and pollution reduction: “Pollution, unsustainable withdrawals¹⁴, water diversions, and the loss of vegetation in aquifer recharge areas pose major threats to

¹² Edmond, J., et. al. (2013). pp. 5-6

¹³ Areas of high endemism are areas with high numbers or concentrations of species found nowhere else but within that region.

¹⁴ Unsustainable withdrawals are withdrawals of water from surface or aquifer sources that exceed the system’s capacity to maintain sufficient water in it for intended needs and purposes (including supporting biodiversity or for desired human uses).

rivers, lakes, and aquifers. These factors impact the ability of ecosystems to store, deliver, purify, and transport water for people and nature. Improving access to sanitation serves fresh water conservation by addressing wastewater pollution through reducing the runoff, trash, and fecal matter that would otherwise be emptied into the watershed.”

Cross-cutting relevance of gender to integration: “Women are often responsible for domestic and community water management, from collecting water to water storage and use... Freshwater conservation efforts leading to improved access to clean water lead to multiple benefits in health, income, and education, particularly for women and girls.”

In direct response to the issues raised by these interdependencies, SDG 6 advocates for a holistic approach to solving water challenges. The immediacy of the SDG timeline – a 2030 target – demands that we approach challenges simultaneously through integration. The interviews and case studies of this report are intended to provide additional evidence of the power of integration to produce projects with greater longevity and impact.

Integration’s value given limited interdependence or degrees of action

The value of integration is most directly demonstrated by projects that are interdependent, in which one component would not occur or be successful without the other. As a direct result of integration, both components are enhanced and accomplished. However, there is also value in integration with low or no direct interdependence of project components. These types of integrated projects are valuable because they address real needs of both humans and nature. In addition, these projects recognize the need to take a comprehensive approach to watershed management, which aligns with the best practices of integrated water resource management (IWRM) explained below. These types of projects are valuable contributions to the landscape of integration because they elevate the joint consideration of WASH and freshwater conservation goals. Projects 2, 5, and 13 (see Section VII) are examples of this higher-level integration.

Moreover, integrated projects can also bring value at different degrees of action. For example, a project may focus on water access for one community (of many communities within a watershed) with no sanitation, or reforestation of one or two high conservation value areas in that community’s watershed. Although this means that the watershed’s communities do not have 100% WASH access and the watershed is not fully conserved, the work is still valuable in that can be the first step in moving towards a more comprehensive, long-term approach to addressing water challenges for both people and nature.

Integrated Water Resource Management (IWRM)

The importance of holistic watershed management stems directly from the philosophy of integrated water resource management (IWRM). IWRM is commonly cited as justification for integration (see a discussion of the reference to IWRM in Section V on

the motivations for integration). The Global Water Partnership defines IWRM as “a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”¹⁵

IWRM is a strategy born out of the Dublin Principles on Water and Sustainable Development, published in 1992 following the International Conference on Water and the Environment. It is “a cross-sectoral policy approach, designed to replace the traditional, fragmented sectoral approach to water resources and management that has led to poor services and unsustainable resource use.”¹⁶ IWRM is accepted as a sound, logical approach by practitioners working in water around the world, and the Global Water Partnership works in all regions to promote national IWRM planning.

Similar to referencing SDG 6 as a justification for integrated WASH and freshwater conservation work, both the WASH and freshwater conservation communities look to IWRM as a broader, conceptual justification for integration because water for people (via drinking water and sanitation) and water for nature are specifically called out in the IWRM strategy (see Image 1 below). SDG 6 is a direct reflection of the importance of IWRM, and integration is a logical mechanism to address the priorities of both WASH and freshwater conservation work.

Image 1. IWRM and its relation to sub-sectors



It is important to understand the various ways that integrated projects can be defined because by classifying examples of integration, we can identify those that are most successful and have the greatest impact. It is also important to understand the current justifications for integration so that implementers of integrated projects can continue to build the evidence base for its value. This report applies this classification method to specific case studies in Section VII to provide tangible examples of its use.

¹⁵ [“What is IWRM?”](#) Global Water Partnership.

¹⁶ *ibid*

IV. Policy, Institutions, and Research That Support Integration

The objective of this section is to provide a reference to policies, institutions, and research at the international, regional, and national level that enable integration of WASH and freshwater conservation, either by providing the legal framework, implementing power, or evidence base to support it. It is not meant to be an exhaustive list or comprehensive overview by any means. These specific examples were chosen as details emerged in interviews and were collected via research during a time-limited project, and there are other existing examples.

This section is also intended to highlight where there is room to continue the development of policies and legal frameworks that can support an integrated approach. WASH and freshwater conservation organizations continue to implement integrated projects despite the current barriers. As these projects occur, it will be crucial to add them to the evidence base for integration and reference these examples when advocating for changes in policy, funding, and legal frameworks that enable integration. Partners such as Coca-Cola and other advocates in the public and private sector also have a role to influence these changes and provide avenues for supporting integrated WASH and freshwater conservation work.

It is important to note that some of these examples reference the integration of WASH and integrated water resource management (IWRM) practices instead of specifically freshwater conservation. This discrepancy in focus on conservation versus broader water resource management is referenced in the explanation of IWRM in Section III above and discussed further in Section V on the motivations of WASH and freshwater conservation organizations to implement integrated projects. This section attempts to highlight policy that specifically identifies conservation within a broader policy reference to IWRM.

Sustainable Development Goal 6

In September of 2015, the United Nations (UN) announced the result of years of research and debate by numerous working groups and evaluation of input from all sectors of society by launching the Sustainable Development Goals (SDGs). These 17 goals apply to everyone and seek to mobilize efforts, through 2030, to solve significant problems, from poverty and climate change to water and inequalities of many forms.

In particular, SDG 6 focuses on water with the overarching goal to “Ensure availability and sustainable management of water and sanitation for all”¹⁷ with important targets that go beyond access to drinking water, sanitation and hygiene to include water quality and wastewater treatment, water scarcity and water-use efficiency, integrated water resources management and water-related ecosystems.¹⁸ This is the most visible and

¹⁷ [“Goal 6: Ensure access to water and sanitation for all.”](#) Sustainable Development Goals. UN.

¹⁸ [“Indicators and Monitoring.”](#) UN Water.

influential policy instrument that advocates for the integration of WASH and freshwater conservation work.

The SDGs leverage the success and expand the ambition of the Millennium Development Goals (MDGs)¹⁹, which established global recognition of development challenges, as well as a commitment to make significant progress. There was mixed progress, globally, in reaching the 2015 deadline for the MDGs but their establishment was nonetheless significant as it considerably raised awareness, generated resources and mobilized action. Importantly, what was achieved has considerable benefits to the lives and livelihoods of millions of people.

The SDGs present an opportunity to leverage the momentum of the MDGs along with knowledge and expertise in places where substantial progress already exists on a given SDG goal. They also address the MDG targets that were not met by 2015. Specifically, within MDG Goal 7, “Ensure environmental sustainability,” Target C was to “Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.”²⁰ While the improved water source target was met the world missed the MDG target for sanitation. The report on the MDG target summarizes:

“Between 1990 and 2015, the proportion of the global population using an improved sanitation facility has increased from 54 per cent to 68 per cent. This means that 2.1 billion people have gained access to improved sanitation since 1990, and the proportion of people practising open defecation globally has fallen almost by half, from 24 per cent to 13 per cent. However, in 2015, 2.4 billion people are still using unimproved sanitation facilities, including 946 million people who are still practising open defecation.”²¹

In addition to recognizing these challenges, the development process for the SDGs was robust, involving diverse perspectives and expertise within each area and elevating the most important issues as identified by the international community. Particularly for water, SDG 6 serves as an exciting recognition of the value of unifying efforts to improve not only WASH, but also freshwater conservation and broader IWRM.

Challenges to SDG 6 implementation

Many implementing governments and organizations are struggling to identify precisely *how* these efforts should be integrated. Without actionable, digestible guidance for implementation, SDG 6 could risk facing similar roadblocks as IWRM: an excellent

¹⁹ [“News on Millennium Development Goals.”](#) United Nations.

²⁰ [“The Millennium Development Goals Report 2015.”](#) United Nations. p. 58.

²¹ *ibid.*

overarching theory that may be applied at the national level, but more difficult to implement at the district and local levels. A key foundation for implementation is the monitoring framework, given that “monitoring systems make development investments go further, help steer decision-making, foster learning about which interventions work and which do not, and can support productive integration with other sectors and targets within the SDGs.”²²

Currently, UN Water, as a consortium of UN agencies working in water, is leading the process to finalize the monitoring framework for SDG 6. UN Water clearly states its vision for integrated monitoring:

“At present, there are several global initiatives that are monitoring different aspects of the water sector, but a coherent framework is missing. To fulfil this need, Integrated monitoring of water and sanitation related SDG targets – GEMI, is currently being developed, integrating and expanding existing efforts to ensure harmonised monitoring of the entire water cycle... Together, JMP [WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation], GEMI and GLAAS [UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water] will be able to monitor global progress towards the entirety of SDG 6.”²³

The GEMI integrated monitoring initiative is an interagency group operating under the umbrella of UN Water, composed of United Nations Environment Programme (UNEP), the United Nations Human Settlements Programme (UN-Habitat), the United Nations Children’s Fund (UNICEF), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO) and the World Meteorological Organization (WMO).²⁴ These organizations have different perspectives and objectives related to water, and the group may be challenged to develop truly integrated measures for SDG 6 implementation.

As discussed in the previous section on defining integration, projects in which the WASH and freshwater conservation components are interdependent clearly increase impact because without integration the project could not occur or be successful. As such, this value is relatively easy to recognize and measure. On the other hand, measuring the value of projects with little interdependence or different degrees of integration is ambiguous and not extensively explored. The ABCG “Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators” attempts to capture this value with its section on “value-added indicators,” and these are

²² [“Tackling the Challenges of SDG Monitoring: A Roadmap Outlining the Costs and Value of a Water Sector Monitoring System.”](#) UN Water, 2015.

²³ [“Indicators and Monitoring.”](#) UN Water. 2015.

²⁴ [“GEMI Background and Objectives.”](#) UN Water.

being referenced and tested on two current ABCG demonstration projects and an existing project (see Section VII, Projects 4, 14, and the PHE project).²⁵ The continued development of aligned and integrated monitoring frameworks and indicators, by the UN GEMI integrated monitoring initiative, the ABCG indicators, and others will be critical to help measure the value of this level of integration.

Integration in International Development

Several international development entities have implemented integrated WASH and freshwater conservation work, either by implementing it directly or funding its implementation or research by other parties. The ability of these entities to implement integrated work has been varied, largely use to existing constraints of funding and monitoring requirements. As one illustrative example, the case of the United States International Agency for Development (USAID) is explored below:

USAID

USAID is the lead U.S. Government agency that works to implement U.S. foreign development assistance with a twofold purpose of furthering America's interests while improving lives in the developing world. It is funded by the U.S. Congress and thus is subject to the objectives and time specifications of U.S. Federal budget allocations. Though the USAID Water and Development Strategy, which was created in 2013, is informed by the MDGs and other policy on international development, its programming reflects the objectives of a key funding source, the Senator Paul Simon Water for the World Act of 2014,²⁶ which primarily focuses on WASH objectives. The overarching goal of the USAID Water and Development Strategy is “to save and advance development through improvements in WASH programs, and through sound management and use of water for food security.”²⁷ The resulting strategic objectives are:

1. Improve health outcomes through the provision of sustainable WASH.
2. Manage water for agriculture sustainably and more productively to enhance food security.

Regarding climate change and IWRM, USAID “addresses the climate change and water linkage in its Climate Change and Development Strategy (2012-2016)” and “specifically endorses the principles and proven approaches of integrated water resources management (IWRM) and encourages the use of all appropriate technologies and tools in achieving those objectives.”²⁸ These mentions point to the important role of climate change adaptation strategy in allowing water resource management (and in some cases, conservation): given the USAID’s significant focus on climate change and the Presidential Initiatives for development in Climate Change, Food Security, and Global

²⁵ ABCG (2014).

²⁶ “[Senator Paul Simon Water for the World Act of 2014](#).” USAID Fact Sheet.

²⁷ “[USAID Water and Development Strategy: 2013 - 2018](#).” USAID. 2013. pp. 5-6

²⁸ *Ibid.*

Health, USAID has managed to incorporate some elements of water resource management into projects by appropriately classifying them as climate change adaptation and water security efforts. Under this climate change umbrella, USAID also has funding to conserve biodiversity, and in some cases water resource management and conservation objectives can be incorporated under this allocation.

The KALDRR-WASH program is an example of a completed USAID-funded project that incorporated WASH and water resource management, specifically related to ground water mapping, because it contributed to the community's broader climate change adaptation and resilience (see Section VII, Project 10). The success of this work also inspired a follow-on project that builds on the same themes and is on-going, the Kenya RAPID program.²⁹

One of the best examples to date of USAID's attempt to integrate water work is a recent solicitation, "Sustainable Water Partnership" (SOL-OAA-16-000084) which will be supported by funds dedicated to climate change adaptation and from the Water for the World Act.³⁰ "The goal of the SWP is to increase resilience to water security risk at the basin, sub-basin, or local catchment scale... for sustaining livelihoods, human well-being, socioeconomic development, and the protection of ecosystem services that underpin these development objectives."

The solicitation highlights the intent to work across existing USAID programming in water (primarily WASH), global climate change adaptation, biodiversity, food security, and economic growth, and focus on operating "at the basin, sub-basin, and local catchment scale where water is effectively managed and where WRM is foundational to the sustainability of the locale's suite of social, economic, and environmental objectives." Additionally, SWP highlights that it intends to reflect the "systems approach" and take concrete actions reflected in the SDG agenda and specifically SDG 6. If carried out successfully, SWP will allow USAID to apply a lens of water resource management to all development goals, and one of the results will be integration of WASH and freshwater conservation.

Additionally, other USAID initiatives have enabled integration of WASH and freshwater conservation research and project implementation. One of the most notable is the Africa Biodiversity Collaborative Group (ABCG), discussed further below. The Water and Development Alliance (WADA) partnership between USAID and the Coca-Cola system was another initiative that enabled integrated work. This partnership was built to contribute to "protecting and improving the sustainability of watersheds, increasing access to water supply and sanitation services for the world's poor, and enhancing productive uses of water."³¹ Three of these projects are highlighted as case studies (see Section VII, Projects 2, 5, and 13).

²⁹ "[Kenya Resilient Arid Lands Partnership for Integrated Development](#)." USAID Fact Sheet. 2016.

³⁰ "[SOL-OAA-16-000084, Sustainable Water Partnership, Agency for International Development](#)." Grants.gov.

³¹ "[Water & Development Alliance \(WADA\)](#)." USAID & Coca-Cola.

Apart from these uniquely funded exceptions, the specifications of USAID’s funding allocations somewhat limit the agency’s ability to integrate water resource management and conservation with WASH and development efforts. These funding constraints reflect a broader constraint faced by state-sponsored international development agencies governed by government-allocated funding. Until these funding sources reflect the broader need to integrate WASH, water resource management, and freshwater conservation, development organizations will be more limited in their ability to implement integrated projects where necessary. The next phase of USAID’s strategy for water will be reflected in the development of a government-wide Global Water Strategy, which the Water for the World Act mandates to be completed by October 1, 2017.

Africa Biodiversity Collaborative Group (ABCG)

ABCG is comprised of seven international conservation NGOs: African Wildlife Foundation, Conservation International, the Jane Goodall Institute, The Nature Conservancy (TNC), Wildlife Conservation Society, World Resources Institute, and WWF. Its goal is to work “collaboratively and efficiently and effectively to further a sustainable future for the African continent.” It is funded by The John D. and Catherine T. MacArthur Foundation, the Critical Ecosystem Partnership Fund, the U.S. Agency for International Development, the U.S. Fish and Wildlife Service, and its members.³²

ABCG has a body of work focused on advancing the understanding of the integration of WASH and freshwater conservation. Their initial white paper, “Linking Biodiversity Conservation and Water, Sanitation, and Hygiene: Experiences from sub-Saharan Africa” provides preliminary evidence of the benefits of integrating WASH and freshwater conservation. ABCG’s “Freshwater Conservation and Water, Sanitation, and Hygiene Integration Guidelines” also provide an excellent framework to approach the design and implementation of integrated projects. Finally, the resulting monitoring framework they developed for integrated projects, “ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators,” is the first monitoring framework of its kind to assess these types of projects. It attempts to capture not only the accomplishments of the respective WASH and freshwater conservation components of a project, but also the value add that integration brings.

ABCG is now testing the guidelines and monitoring framework in the field through implementation of demonstration projects that integrate WASH and freshwater conservation. Two of these projects, one in South Africa and the second in Uganda, are featured in detail in the case studies section (see Section VII, Projects 4 and 14). A high-level summary of a third project in Cameroon, which is an existing project with a population, health and environment focus also plans to test the ABCG tools (see Section VII, the PHE project). These projects will be key to further develop the evidence base around the value add of integration and how it is measured.

The work of the ABCG also extends beyond its focus in sub-Saharan Africa through a working group that includes CARE, Conservation International, Catholic Relief Services,

³² [“About Us.”](#) Africa Biodiversity Collaborative Group.

FHI360, GETF, Helvetas, Millennium Water Alliance, TNC, Water for People, WaterAid, World Vision, WWF and Results for Development. The objective of this group is to continue the learning on integration of freshwater conservation and WASH through the following specific activities:

“Technical: Strengthen capacity of conservation, health and development practitioners to implement integrated WASH and freshwater conservation approaches.

Maximizing Investment: Increase funding for integrated WASH and freshwater conservation collaborative efforts by communicating the added value of cross-sector approaches.

Advocacy: Strengthen efforts to engage a broad coalition of allies to promote enabling policies and protect foreign assistance for integrated WASH and freshwater conservation programming.

Awareness-raising: Increase understanding of the importance of integrating WASH and freshwater conservation among key stakeholders.”³³

The authors of this report hope this work contributes to the progress of this working group.

IRC Watershed Partnership

IRC is a Dutch NGO that works with governments, service providers and international organizations to deliver lasting water sanitation and hygiene services.³⁴ IRC leads the Watershed initiative, which is building capacity of civil society organizations to hold governments accountable to deliver improvements in the governance and management of water, sanitation and hygiene services as well as of the water resources on which they draw.³⁵ The initiative works both at the international level and in six countries (Kenya, Uganda, Mali, Ghana, Bangladesh, and India). Watershed will be an important initiative to help bring the integrated goals of SDG 6 from policy to implementation, starting with the initiative member countries. One of the most recent accomplishments of Watershed occurred at the 2016 Africa Water Week and is highlighted below.

Regional Efforts and the Role of Water Operators

Several regions are already mobilizing the various actors involved in water resource management to work toward implementing the integrated goals of SDG 6. In some regions, water operators can be considered key implementers of an integrated approach: they are already leading watershed conservation efforts out of necessity to ensure the quality and quantity of their water supply. While many operators in

³³ WASH and Freshwater Conservation Working Group Workplan Draft, provided by Conservation International Aug 4, 2016.

³⁴ “[Manifesto](#).” IRC.

³⁵ “[Watershed empowering citizens programme](#).” IRC.

developing countries struggle to reach rural populations and informal urban settlements, the work by the actors in this sector is an important contribution to the holistic approach of SDG 6. The list below features illustrative examples, is not exhaustive, and notably does not include municipal-level water operators in urban and peri-urban areas, who are important actors in this work.

African Ministers Council on Water (AMCOW) and African Civil Society Network on Water and Sanitation (ANEW)

At the 6th Africa Water Week in July of 2016, over 100 civil society organizations (CSOs) pledged to work with the African Ministers Council on Water (AMCOW) and the national governments to jointly prepare for and implement the Sustainable Development Goal 6 (SDG 6) and the Dakar N'gor Declaration on Water and Sanitation. These CSOs committed to this work under the formal association of the African Civil Society Network on Water and Sanitation (ANEW) and presented a formal position statement.³⁶ Following this statement, the CSOs, AMCOW, and national governments (specifically Water and Sanitation Ministers) will be expected to collaborate jointly to develop a plan for implementing according to these outcomes, which will be supported by the partners of the IRC's Watershed initiative. This is a significant step toward preparing governments at the regional and national level to implement SDG 6 in a holistic way that integrates WASH and conservation goals.

International Network of Basin Organizations (INBO)

The INBO is a network of "Basin Organizations" (i.e., organizations which have been entrusted by relevant public administrations with IWRM at the level of basins of rivers, lakes or aquifers, either national, federal or transboundary), the governmental administrations in charge of water in each country, and bi and multilateral cooperation agencies supporting activities related to integrated and sustainable water resources management at the level of river basins. Its key objective is to "promote the principles and means of sound water management in cooperation programs to reach sustainable development" through lasting relations between organizations interested in this work, tools, trainings, education, and evaluation of ongoing activities. It has 188 Member Organizations and supports eight regional basin organizations. Currently, the INBO is implementing its action plan for developing and strengthening river basin organizations, the goal of which is "to support all initiatives for the organization of Integrated Water Resource Management at the river basin, lake and aquifer level, whether national or transboundary. It also aims to develop many experiments to reconcile economic growth, social equity, environmental conservation, water protection and participation of the Civil Society." This network of organizations could serve as another important partner to scale integrated projects throughout a watershed.³⁷

³⁶ Blesgraaf, R., Mulumba, J., Walter, E. "[Africa's Civil Society agree to support implementation of SDG6 and N'gor Declaration.](#)" IRC. July 2016.

³⁷ "[International Network of Basin Organizations.](#)" INBO Leaflet.

Global Water Operators' Partnership Alliance (GWOPA)

“GWOPA’s vision is that water and sanitation operators help each other to achieve universal access to sustainable water and sanitation services through not-for-profit peer support partnerships. GWOPA will be the global leader in Water Operators Partnerships (WOPs) promotion, facilitation, and coordination, and the principle source for WOPs knowledge and guidance so that effective WOPs contribute to meeting 2 global water and sanitation objectives including those relating to the Millennium Development Goals.”³⁸ Since GWOPA’s establishment in 2009, WOPs have been established in Africa, the Arab region, Asia and the Pacific, Europe, and Latin America. In particular, the Latin America and Caribbean has led important work to understand the importance of source water and watershed conservation and the role of water operators in this work.

Latin America and Caribbean Water Operators Partnership (WOP-LAC) and Caribbean Water Operators Partnership (Cari-WOP)

WOP-LAC and Cari-WOP are the regional and sub-regional bodies, respectively, of GWOPA. They were established in 2007 to unify regional work toward the Millennium Development Goal on water and sanitation. WOP-LAC is led by the Latin American Association of Water and Sanitation Operators (ALOAS) and supported by the Inter-American Development Bank and UN-Habitat.³⁹ One of WOP-LAC’s goals is to promote best practices among members through training and participation.

In November 2014 the group convened to discuss “Strategies of Water Operators for the Protection of Sources and Basins: Challenges and Opportunities” and commissioned a related report: “Strategies of Water Operators in Latin America and the Caribbean to Protect Water Sources and Hydrographic Basins: Results of an Emerging Community of Learning Supported by the Inter-American Development Bank.”⁴⁰ This report serves as an excellent reference of water operators in the region who are undertaking watershed protection methods.

A Cari-WOP report, “Building a Climate Resilient Water Sector in the Caribbean: Strategies for Water Utilities” presents how Caribbean water companies are strengthening their capacity for water security and climate resilience.⁴¹ Operators’ adoption of source water and watershed protection strategies are a key component of the report’s analysis and highlights the increasing amount of operators taking this approach to resilience. These regional associations are well-equipped to address the

³⁸ [“Global Water Operators' Partnerships Alliance Charter.”](#) GWOPA.

³⁹ [“QUÉ ES WOP-LAC?”](#) ALOAS.

⁴⁰ [“Estrategias de los Operadores de Agua en la Protección de Sus Fuentes y Cuencas: Retos y Oportunidades.”](#) BID. (Report link embedded in the “documentos” section of the page).

⁴¹ [“Building a climate resilient water sector in the Caribbean: strategies for water utilities.”](#) (Report link embedded in the “documentos” section of the page).

integrated nature of SDG 6 as operators continue to explore opportunities to improve service while preserving source water quality and quantity.

Association of Regulators of Water and Sanitation of the Americas (ADERASA)

ADERASA was established in 2001 to promote the development of efficient and effective regulatory processes for water and sanitation in Latin America. In 2013, members established the Green Infrastructure Group within ADERASA to share best practices in watershed protection by water operators and align on a strategy to strengthen and promote green infrastructure among ADERASA members. This group has been an important forum for ADERASA members to share their learnings from water funds, a model promoted by TNC (see Section VII, Project 15), quantify the benefits of watershed protection, and develop policy instruments that can be adopted by ADERASA member states.

National Policy That Supports Integration

For national governments, a policy framework for water management that focuses on governance and implementation at the basin level can be a very helpful mechanism to facilitate integration. While laws at the national level rarely provide enough specification to support implementation at the district and local levels, several WASH practitioners cited them as helpful supports because they provide a legal basis for working at the watershed level. This facilitates integration because it requires that the entire watershed be considered when implementing WASH interventions. Examples that stand out include:

Ecuador

The 2009 constitution defends both humans' and nature's right to water. Article 411 reads:

“The State shall guarantee the conservation, recovery and integral management of water resources, watersheds and ecological flows associated with the water cycle. All activities that can affect the quality and amount of water and the equilibrium of ecosystems shall be regulated, especially in water replenishment sources and zones. The sustainability of ecosystems and human consumption shall be priorities in water use and development.”⁴²

While the implementation of this law remains threatened by industry and landowner interests, the legal framework has enabled the establishment of an inter-municipal watershed protection consortium, the Regional Water Fund (Fondo Regional de Agua, or FORAGUA).

⁴² [Constitution of the Republic Of Ecuador \(in English\)](#). Political Database of the Americas. Edmund A. Walsh School of Foreign Service Center for Latin American Studies. Georgetown University. 2011.

FORAGUA maintains a pooled conservation fund across municipalities, many of which share the same watersheds, and writes water protection ordinances for municipalities to adopt. Conservation activities include community education, land purchase and landscape restoration. FORAGUA's ultimate goal is to incorporate all 39 municipalities in Southern Ecuador into the fund.⁴³ Both Ecuador's constitution and FORAGUA are excellent foundations for increased implementation of WASH and conservation integration.

Peru

The "Modernization of Sanitation Services" Law (Ley 34005: Modernización de Servicios de Saneamiento) reflects an integrated approach in its principles, outlined in Article 3: universal access, social inclusion, environmental protection, business autonomy, and efficiency. Specifically, "the State at all levels is responsible for the sustainable management of water resources and concordance with environmental laws. The entities providing sanitation services and the National Superintendent of Sanitation Services (SUNASS) must establish in the Master Optimization Plan mechanism for environmental compensation and watershed management."⁴⁴

Uganda

The Uganda Source Water Protection Framework, which intends to help water infrastructure managers and relevant government officials at the national and district levels "identify the risk to a water source and engage the people and organizations responsible for the problem in a positive way that lead to a mutually beneficial outcome." The justification for the framework argues that "protection of water catchments in many countries especially those densely populated is no longer an option but a requirement."⁴⁵

Mexico

The National Forest Commission of Mexico, CONAFOR, administers a Matching Funds program to finance the rehabilitation of Mexico's challenged watersheds. Through a payment for environmental services (PES) system between upstream ecosystem stewards and downstream watershed users, the program funds watershed restoration

⁴³ Moss, Daniel. "[Stop that Cow: When Ecuadoran Cities Organize to Protect Water Supplies.](#)" National Geographic Water Currents. August 2014.

⁴⁴ "[Ley N° 30045. Ley De Modernización De Los Servicios De Saneamiento.](#)" p.2. El Peruano. 2013.

⁴⁵ "[Framework and Guidelines for Water Source Protection, Volume 1: Framework for Water Source Protection.](#)" p. 7. The Republic of Uganda Ministry of Water and Environment. 2013.

through soil conservation, sustainable forestry and water source protection.⁴⁶ This is a model replicated by water funds, such as those coordinated by TNC (see Section VII, Project 15).

Research That Supports the Integration Evidence Base

The case studies included in this report are intended to contribute to the evidence base that supports integration of WASH and freshwater conservation. While these case studies provide specific, localized examples of successful integration, there is little statistically significant data or academic literature to build the case for integration of WASH and freshwater conservation specifically. Below are some examples of research that has or can contribute to this field:

Ecosystems and Human Health (Ongoing)

Source: Taylor Ricketts, Brendan Fisher, Gund Institute for Ecological Economics (University of Vermont), National Socio-Environmental Synthesis Center (SESYNC), HEAL consortium, Luc Hoffmann Institute (WWF)

“On top of generating economic benefits to people, ecosystems can support human health as well. Forests, reefs, and wetlands can provide nutrition to rural communities, regulate air and water quality, and control infectious diseases. Ecosystems, however, are being rapidly degraded worldwide and there is an increasing need to understand this relationship. The project ‘Ecosystems and Human Health,’ led by Taylor Ricketts and Brendan Fisher from the Gund Institute for Ecological Economics at the University of Vermont, is an effort to better understand and model the linkages between different health outcomes and ecosystem degradation. Other partners in this project are the National Socio-Environmental Synthesis Center (SESYNC), the HEAL consortium, and the Luc Hoffmann Institute at WWF.

For this collaboration the team uses a large geo-referenced dataset on health and demographic information for about 800,000 individuals in 49 developing countries. These data are linked to local environmental conditions. Initial analyses show a significant relationship between ecosystems health and children’s health. In particular, the results suggest that higher forest cover is associated with a lower incidence of certain diseases for sectors of the population with less access to municipal water supplies and other infrastructure.”⁴⁷

⁴⁶ Moss, Daniel. “[Securing Good Drinking Water: Footing the Bill to Fix Nature.](#)” National Geographic Water Currents. June 2016.

⁴⁷ Description from project team and information from webpage: “[Projects.](#)” Taylor Ricketts Lab. The University of Vermont.

“Estimating watershed degradation over the last century and its impact on water-treatment costs for the world’s large cities”⁴⁸

Source: Robert I. McDonald, Katherine F. Weber, Julie Padowski, Tim Boucher, and Daniel Shemie
June 14, 2016

This research builds the case for freshwater conservation for the benefit of lower water treatment costs. It argues that “urban water-treatment costs depend on the water quality at the city’s source, which in turn depends on the land use in the source watersheds.” While this work demonstrates the beneficial impact of freshwater conservation on water security and quality, it does not encompass WASH because it does not touch on increasing water access for those living in the watershed. Thus, it does not relate directly to WASH and freshwater conservation integration. Still, this research is included here because it is recent work that demonstrates the beneficial link between freshwater conservation and WASH infrastructure. The examples studied are the basis for watershed conservation implemented through water funds, such as those coordinated by TNC (see Section VII, Project 15).

Integrated Development Evidence Map

Source: FHI 360

A research effort conducted to assess integration overall, this evidence map “provides decision-makers with over 500 impact evaluations conducted to assess integrated development programs.” The study assessed programs “that intentionally linked the design and delivery of interventions across more than one of nine core development sectors (agriculture & food security; economic development; education; environment; governance; health humanitarian, nutrition; and water, sanitation & hygiene).”⁴⁹ Unfortunately, the map does not provide specific analysis on an integrated WASH and conservation or environmental programs.

Integration of Global Health and Other Development Sectors: A Review of the Evidence

Source: FHI 360

“As part of its commitment to designing and delivering effective integrated human development solutions, FHI 360 conducted a literature review to synthesize the current evidence base for integrated development interventions.”⁵⁰ Although this review does not include integrated WASH and freshwater conservation projects specifically, it provides a general evidence base for integration its challenges and range of results.

⁴⁸ McDonald, R., Weber, K., Padowski, J., Boucher, T., Shemie, D. “[Estimating watershed degradation over the last century and its impact on water-treatment costs for the world’s large cities](#).” Proceedings of the National Academy of Sciences of the United States of America. 2016.

⁴⁹ “[Integrated Development Evidence Map](#).” FHI 360. 2016.

⁵⁰ “[Integration of Global Health and Other Development Sectors: A Review of the Evidence](#).” FHI 360. 2014.

V. Motivations to Pursue Integration

The objective of this section is to share the motivations and language of the WASH and freshwater conservation communities around integration, with the intent to support collaboration between these communities for future integrated work.

The motivations listed reflect direct feedback from interviews with WASH and freshwater conservation practitioners who have designed, planned, and/or implemented integrated projects. Rather than direct quotes, they are presented as consolidated comments and higher-level themes. They represent the views of the organizations interviewed as part of this research (see Appendix I for a list of organizations) and are by no means an exhaustive list.

WASH community motivations for integration

Interdependence

WASH organizations recognize the interdependence of WASH and freshwater conservation, and specifically call out the link between watershed conservation and WASH service sustainability and quality. Interviewees emphasized that proper implementation of a WASH project, whether community water access, sanitation, or hygiene, is as much about the physical WASH infrastructure as it is about the sustainability and quality of service. The Global Water Initiative highlights that watershed protection is one of the six key factors for improving rural water services in Central America, as “up to 60 percent of the water used in Central America is pumped from aquifers, which are threatened by overuse from urbanization and contamination by agriculture and industrial waste.”⁵¹

Interviewees emphasized a proactive approach to watershed management to prevent quality or service issues, but also provided examples of cases where integration of freshwater conservation became necessary due to unforeseen water quality issues. For example, Water for People field staff in several countries escalated the sediment deposits (caused by erosion) that were not only lowering drinking water quality, but also damaging WASH infrastructure. As a result, Water For People has incorporated water resource management into their monitoring framework in order to ensure this important aspect of WASH service is prioritized in project implementation (refer to indicator 8, p. 7 of the monitoring framework).⁵²

Water security, climate change adaptation, and disaster risk reduction

WASH practitioners also discuss the importance of freshwater conservation in the context of water security, climate change adaptation and disaster resilience. These are

⁵¹ Davis, S., Pocasangre, A., Hicks, P., “[Six Factors for Improving Rural Water Services in Central America](#).” Global Water Initiative. 2014. p. 15

⁵² “[Sustainable Development Goals](#).” Water for People. 2016.

key priority areas of focus for WASH organizations as they work to develop climate change-resilient WASH, and they can help motivate integration if the freshwater conservation component contributes to one of these broader themes. This reflects the perspective of many international development agencies that are primarily focused on WASH, as highlighted in Section IV on policy. This also helps explain why, in some cases, WASH organizations incorporate freshwater conservation into a project when it is included in a broader justification for climate change adaptation work.

In keeping with this theme, WaterAid has framed watershed conservation within the context of their Water Security Framework⁵³ and a specific approach called the Securing Water Resources Approach (SWRA) (also called the Community-Based Water Resource Management (CBWRM)). The objective of this approach is to “strengthen community resilience against climate variability and climate change” by supporting communities to improve water resource management.⁵⁴ It places a heavy emphasis on threat identification and water resource monitoring. A compelling example of success is in Burkina Faso, where “the data enabled people to, among other actions, plan which groundwater wells to use, request seeds that need less water and build sand dams.” Thus, this type of approach can build the case for watershed protection restoration as a broader component of water security and resilience.

IWRM

WASH practitioners frequently justified integration of WASH and freshwater conservation work within the broader concept of IWRM, rather than identifying watershed conservation in itself as a focus of integration. However, most practitioners emphasized the need to re-frame IWRM to help make it more manageable and implementable. This is in response to the frequent concern that IWRM, while a logical and proven methodology, is often too broad and all-encompassing to apply at the local level. The SWRA/CBWRM approach mentioned above is one example of an attempt to reframe IWRM to a smaller, local, implementable level.

In addition, interviewees cited that reframing IWRM within the context of water security, climate change adaptation, resilience, or integration gives the concept new momentum. Finally, several WASH practitioners also referred to their work as “small” water work, compared to “big” water work at the whole watershed level, which they identified with freshwater conservation organizations or others working at the watershed level.

Impact and Longevity

Practitioners accustomed to integrating WASH with other community development needs, such as CARE International, are motivated to implement integrated WASH and

⁵³ WaterAid (2012) Water security framework.

⁵⁴ [“Making communities ready for a changing climate.”](#) WaterAid. Jul 2015.

conservation projects because they recognize the strong link between conservation and the wellbeing of vulnerable communities. In addition, they emphasize the interdependency of many issues related to development. CARE's 2020 Program Strategy,⁵⁵ while it does not specifically highlight conservation, emphasizes a holistic approach to development. Interviewees aligned with this philosophy emphasized that a holistic approach to overcoming development challenges is the only way to make real, lasting change within a community.

SDG 6 Alignment

Several WASH organizations cited the need to align with SDG 6, though they emphasized the need for monitoring frameworks to enable this integration and funding that supports both WASH and freshwater conservation objectives in order to make it possible. This is yet another reason why the water resource management indicators of the Water for People monitoring framework are a significant step and potential model for other WASH organizations.

Conservation Community Motivations for Integration

Interdependence

Freshwater conservation practitioners also cited interdependence as a key motivator for WASH and freshwater conservation integration, emphasizing both the need for a systems approach to water issues as well as the connection between WASH and ecosystem contamination. For example, integration is embedded into Wetlands International's philosophy to "safeguard and restore wetlands for people and nature."⁵⁶ They recognize that working in WASH as well as conservation is the only way they can apply a true systems approach – one that acknowledges the water cycle the whole ecosystem – to wetland conservation and restoration.

All freshwater conservation interviewees also acknowledged the impact of WASH on ecosystems. In communities without proper sanitation infrastructure or adoption, untreated sewage deposited into rivers is a significant source of contamination and harm to the watershed. Conservation organizations frequently work at a holistic, watershed level, and recognize where lack of sanitation downstream can also counteract efforts to protect and restore the watershed upstream. This was an example frequently cited by WWF and water funds supported by TNC (see Section VII, Project 15). These cases demonstrate the necessity of integration in order to achieve the goals of conservation projects.

Community Engagement

Another significant motivation for freshwater conservation organizations to pursue WASH and freshwater conservation integration is the ability to engage the local

⁵⁵ ["The Care 2020 Program Strategy."](#) CARE Canada.

⁵⁶ [Wetlands International homepage.](#)

community in the conservation intervention. WWF explained that WASH can be extremely helpful to demonstrate the importance of watershed management to a community. For example, in their projects in the Meso-American reef (see Projects 6, 7, and 8), at first the community did not understand the importance of the forestry and watershed management interventions that WWF proposed. However, once WWF incorporated WASH interventions into the project, they were able to demonstrate to the community the connection between the health water recharge zones and the quality and longevity of their water source.

Along the same lines, freshwater conservation practitioners are motivated to integrate because it helps engage a more diverse audience that may not normally be concerned with conservation. Communities often welcome WASH interventions because they see a more immediate, direct impact on their daily lives. When a conservation organization integrates WASH into their approach, it sends a signal to the local community that the organization is concerned for their wellbeing, not solely those of the species in the area, and the community is often more willing to engage. In this way, integration can help elevate the visibility of conservation overall.

While engagement of the local community is crucial to project success, freshwater conservation organizations cited that they are motivated to integrate because it also helps them engage with higher-level actors in the community, such as the municipal or regional government, and ultimately address conservation as well as WASH objectives. Especially if this government has specific WASH needs, the freshwater conservation organization's willingness to help the government address those needs contributes to a strong relationship that can enable conservation work as well.

Impact and Longevity

Along the lines of community engagement, freshwater conservation practitioners also emphasized the importance of integration to project longevity and the ability to create lasting change within a community. In order for interventions, whether conservation or WASH, to continue after an implementing organization leaves, they need to recognize and address all of a community's needs. Integrating WASH with conservation helps accomplish this.

IWRM

IWRM was frequently cited by freshwater conservation practitioners as a justification to incorporate WASH into conservation interventions. Interviewees highlighted the importance of working at a watershed level and understanding the variety of uses of a watershed and the impact of these users. In contrast to WASH practitioners, freshwater conservation practitioners seldom emphasized the need to make IWRM "smaller" because they are more accustomed to approaching challenges that face the entire watershed.

SDG 6 and GEF Alignment

Freshwater conservation practitioners cited WASH and freshwater conservation integration as one method to align not only with SDG 6, but also the UN's Global Environment Facility (GEF), for which some interviewed organizations are certified implementing organizations. In order to be certified, conservation organizations need to demonstrate integration of several key areas besides environmental work, including mainstreaming gender into all projects. Integrated WASH into conservation work provided one mechanism for demonstrating the appropriate level of integration to become GEF certified.

Vocabulary Discrepancies

One small, but significant, learning from this research is that the WASH and freshwater conservation communities use some vocabulary that relates to integration quite differently. These discrepancies are described briefly here to facilitate communication between sector practitioners:

Conservation

By using the term “freshwater conservation,” freshwater conservation practitioners typically refer to the activities that protect a freshwater ecosystem. On the other hand, WASH practitioners often need context clarification to align on the use of “freshwater conservation.” For them, it can refer to conservation of a watershed or a freshwater ecosystem, or it can refer to the conservation of the available freshwater resource in quantity terms (such as working with communities to actively *conserve* the water they use in arid geographies or where water access is limited). One recommendation is to use the term “freshwater ecosystem conservation” or “watershed conservation” to clarify the definition to discuss WASH and freshwater conservation integration, as seen in the Joint Statement.⁵⁷

Sustainability

Using the term “sustainability” adds potential for confusion between the freshwater conservation and WASH contexts. Freshwater conservation practitioners typically use the word “sustainability” to refer to the sustainability of the water source or the freshwater ecosystem. On the other hand, “sustainability” in a WASH context typically refers to the sustainability of water supply services, focusing on the longevity of the infrastructure that supplies the WASH service to people. WaterAid outlines these aspects of sustainability in its “Sustainability Framework” and defines it as follows:

“Sustainability is about whether or not WASH services and good hygiene practices continue to work and deliver benefits over time. No time limit is

⁵⁷ [“Joint Statement on Water, Sanitation and Hygiene \(WASH\) and Freshwater Ecosystem Conservation.”](#)WaterAid. 2015.

set on those continued services, behaviour changes and outcomes. In other words, sustainability is about permanent beneficial change in WASH services and hygiene practices.”⁵⁸

While this definition of sustainability implies a consideration for the availability of the water source itself, it is important to note in the context of work with freshwater conservation practitioners that it encompasses a broader range of factors than just the water source alone.

These vocabulary discrepancies are examples of how the differing expertise within the freshwater conservation and WASH communities can complement each other to produce effective results through integrated projects, the first step is literally aligning on a common language between the two communities.

⁵⁸ [WaterAid \(2011\) Sustainability framework](#). WaterAid, London.

VI. Benefits and Challenges of Integration

The objective of this section is to summarize some of the key benefits and challenges to integration. In contrast to the discussion of the value of integration in Section III on the different types of integration, these benefits and challenges reflect direct feedback from interviews with WASH and freshwater conservation practitioners who have designed, planned, and/or implemented integrated projects. Rather than direct quotes, they are presented as consolidated comments and higher-level themes. They represent the views of the organizations interviewed as part of this research (see Appendix I for a list of organizations) and are by no means an exhaustive list. They are intended not only to build the case for further WASH and freshwater conservation integration, but also to identify specific barriers based on experience with integration that can be addressed in the future to design and implement successful integrated projects.

BENEFITS OF INTEGRATION

WASH Community

Increased momentum and engagement: integration builds coalitions and bridges the gap between the WASH and freshwater conservation communities. As a result, integrated projects draw in a range of stakeholders and increase momentum, especially for important conservation work that may not receive the same attention and urgency as WASH work. Most importantly, integration of WASH and freshwater conservation increases the social capital around conservation and broader water governance.

Holistic watershed management: integrated projects provide the justification and funding that leads to a more holistic view of the watershed, and the measurement and monitoring allows the management and improvement of the watershed. Moreover, the information collected during monitoring for conservation work can inform decision-making for WASH (e.g., multiple use services work) and enable more reliable identification of threats to the success of the WASH intervention.

Freshwater Conservation Community

Community engagement in conservation: integrated projects allow the local community to have their basic needs met, which helps demonstrate to the community that the conservation organization cares about the populations living in high biodiversity environments, not just the rare species they are often there to preserve. In turn, this usually allows the conservation organization to engage the community and can ultimately result in community-based natural resources management, which is a best practice for conservation. This builds the capacity of the community to manage resources at a wider scale, and in some cases, the communities become the best advocates for conservation.

Increased momentum for conservation: WASH interventions are more visual, shorter in duration, and in general more easily communicate the urgency of the need than

conservation projects. Thus, integrating WASH components with conservation projects can increase the attention and funding to conservation work.

Greater project impact: Integrated projects address more challenges and have a greater impact than standalone projects. First, they address some of the human actions that are a direct threat to wildlife and ecosystems. Additionally, they enable more sustainable WASH interventions that are informed by a holistic view of their water sources. Finally, this holistic view informs better decision-making for both WASH and freshwater conservation work.

CHALLENGES OF INTEGRATION

WASH Community

Complexity: Integrated projects require more patience, sophistication, and effort, especially because freshwater conservation projects typically take more time than WASH projects. Technical expertise is also required to incorporate conservation elements into WASH projects. They also require strong relationships across sectors to engage all of the users of particular watershed. Finally, they often require more work related to the governance of the watershed.

Geographic scope: Integrated projects run the risk of becoming too large to implement because they require work at a watershed level. Especially in geographies where catchments span large geographic areas and cross boundaries, they can become difficult to scope.

Funder understanding: Funders are often very enthusiastic about WASH interventions, but lack the understanding and patience for water resource management and conservation. As a result, funder timelines are often too short, and their monitoring requirements are too focused on the short-term outcomes (e.g., number of people with improved access to drinking water or sanitation) rather than the long-term benefits of integrated work. Some of the examples of integrated projects implemented over a longer time horizon, such as Mi Cuenca (Project 12), required the implementing organizations to source multiple funders to support the various stages and objectives of the work.

Dissipated momentum: WASH projects can create momentum and organizations hesitate to divide and dissipate the attention and funding that is already limited for WASH issues.

Conservation Community

Collaboration with implementing partners: integrated projects can result in wasted time and effort if the terms and scopes of partnerships are not clear. Additionally, it is challenging to find WASH organizations that are both interested in water resource management *and* geographically located where the conservation organization is trying to implement conservation work (see next challenge).

Geographic location: There is a geographic mismatch between WASH and freshwater conservation projects. WASH projects often focus very locally, versus freshwater conservation projects, which need to operate at watershed scale. It is challenging to scale up WASH projects to match this watershed level. Also, either the project funder or the organizations need to push for the projects to be located in the same area or else there is a natural inclination to operate at the most opportune scale (see the HSBC Water Program in the next section for a discussion of this).

Funder understanding: It is challenging to find funders that understand integration and the need for a longer investment and commitment to the project. This is partially the result of the outcomes of WASH and conservation projects operating on different time scales: in general, conservation interventions show true success after 5 or more years, whereas WASH intervention success can be seen in 1-2 years. It is also the result of the division within funding organizations between WASH and water resource management budgets, as well as the pressure from leadership to demonstrate outcomes on an annual basis. Finally, funders sometimes do not understand that integrated projects require more funding than standalone projects because each component needs to have specified funding for its activities.

Complexity: Integrated solutions in particular must be tailored to the project area – there is no panacea, which makes it difficult to scale and duplicate this work. In addition, the technical solutions required for integrated projects are much more complicated. For example, in many cases, environmental flows are excellent tools to apply in integrated projects, but few people can execute them, understand them, and apply them in a holistic way across WASH and conservation objectives in the field.

Sector knowledge and culture differences: Engineering-trained practitioners in WASH organizations often speak a different language from conservation practitioners, and vice versa. There are few experts in either community who are well-versed in both their specialty in either WASH or freshwater conservation *as well* as the nuances of integrating the two.

Governance: In many cases natural resource conservation is not institutionalized in the same way that WASH is, which makes it difficult to gain momentum to implement.

These benefits to integration from the perspective of both WASH and freshwater conservation practitioners contribute to the growing evidence base for further WASH and freshwater conservation integration. Moreover, the challenges identified helps distinguish specific barriers to integration that implementing organizations, partners, and funders can address in the future to design and implement successful integrated projects.

VII. Examples of WASH and Freshwater Conservation Integration

The objective of this section of the report is to provide examples of projects reflecting various levels of freshwater conservation and WASH integration collected via interviews and literature review. It is also intended to demonstrate how the different classifications of integrated projects can be applied to tangible, real-world examples. Applying these definitions helps clarify the original motivations of integrated projects, which is important for two reasons. First, it helps identify how the motivations of a community or an implementing organization to pursue integration can contribute to the work's success. In many cases, understanding what drives an integrated project can be key to unlocking its success because it allows implementers and partners to harness the momentum behind the work. Second, it helps build the case for integration, because while motivations may seem unique to specific projects, parallels can often be drawn between past examples and future scenarios.

This is not intended to be a comprehensive list of projects that integrate WASH and freshwater conservation objectives. Moreover, the process for collecting these projects was driven by word-of-mouth and introductions among the members of the WASH and freshwater conservation communities that were interviewed. The fact that most of the examples are located in Latin America and Africa is not intended to suggest that integrated projects are lacking in other regions, but rather reflects the most referenced examples among practitioners interviewed and the regions where their organizations operate. Please refer to Section II for more information about how these organizations were identified for research.

Project Classification

The three factors to classify integrated projects are repeated here from Section III, with specific mention of the varieties of classifications that are featured in the collection of case studies.

Factor 1: Project Origin

This factor identifies the history of the project: whether it started as a separate project (Types 1 and 2) or whether it was integrated from the start (Type 3). This is useful to both classify and allow distinction as well as understand the original motivations of the project. Note that with the exception of Project 1, this collection of case studies only includes projects that were one of three types (outlined in red): primarily WASH and later integrated freshwater conservation goals (Type 1a), primarily freshwater conservation and later integrated WASH goals (Type 2a), or integrated from the start (Type 3).

Table 1. Project origin classification

1. Primarily WASH		2. Primarily FC	
<i>Definition: launched as a WASH project and may have potential to integrate secondary FC goals</i>		<i>Definition: launched as a FC project and may have potential to integrate secondary WASH goals</i>	
After launching the project it:			
a. Later integrated FC goals	b. Did not integrate FC goals	a. Later integrated WASH goals	b. Did not integrate WASH goals
3. Integrated			
<i>Definition: launched as a project that includes both WASH and FC goals</i>			

Factor 2: Primary Objectives

This factor is meant to identify whether the primary objectives of a project (after it is integrated) are more related to WASH, freshwater conservation, or if they are equally distributed between the two. It is important to note that a project can be integrated while still being based in either primarily WASH or primarily freshwater conservation objectives. This can be for several reasons, including the focus of the implementing organizations and their expertise, a past project in that location, or a donor preference. This distinction is useful for classification as well as to measure the extent of integration.

Table 2. Primary objectives classification

WASH	Equal	FC
Prioritizes WASH objectives	Equally prioritizes WASH and FC objectives	Prioritizes FC objectives

Factor 3: Interdependence

This factor is meant to identify the level of interdependence of the integrated project. It is a measure that is intended to communicate the value or necessity of integration, because if a project was so interdependent that it would fail without integration, or if its success was greatly enhanced by integration, then the value of integration could be considered high. On the other hand, if a project was integrated on a more basic level because the two activities happened at the same time, even worked in tandem, but were not directly interdependent, the value of integration could be considered comparatively lower. However, integrated projects that do not exhibit interdependence still provide value, as we discuss in the next section.

Table 3. Interdependence classification

HIGH interdependence: most or all of the WASH components were critical to achieving the FC objectives or vice versa

SOME interdependence: some specific WASH components were critical to achieving some of the FC objectives, or vice versa

LITTLE to NO interdependence: the WASH and FC components had little to no bearing on each other

Project Summary Explanation

Each project summarized below contains the following details. Full case studies can be found in Appendix II.

Project Number: the project number in Appendix II, organized alphabetically by project name.

Project Name: the project’s full name as referred to by the implementing organizations.

Information Source: the origin of the project information. Note that *this does not indicate all of the project implementers, donors and partners*, and in some cases the project source is not the main implementer.

Source Type: whether the information source organization is primarily a freshwater conservation-focused organization or a WASH-focused organization.

Country: the country of implementation.

Location: the specific region, watershed, etc. of implementation.

Objectives: a high-level summary of the project’s objectives.

Justification: brief information justifying the classification of each factor.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 1a, 2a, or 3	WASH, FC, or Equal	Little/No, Some, or High

Project Summaries

Project Number: 1

Project Name: Committee to Purchase the Micro-Watersheds (Comite de Compra de Micro Cuencas – COMIC)

Information Source: Water for People

Source Type: Primarily WASH

Country: Honduras

Location: El Negrito, Yoro, Honduras

Objectives: The objective of creating the COMIC was to establish an organization to protect natural resources and also unify the effort of the water committees affiliated with the Association of Water Administrative Committees. A key goal of the COMIC is to purchase 80% of the total drinking watershed area within 20 years.

Justification: Water for People also does full WASH programming in El Negrito, providing water catchment and storage tanks, distribution networks, household plumbing, and latrines throughout the municipality.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Primary FC for the watershed land acquisitions; Equal WASH/FC overall	High

Project Number: 2

Project Name: Community WASH and Sustainable Water Management

Information Source: Global Environment & Technology Foundation

Source Type: Primarily WASH

Country: Tanzania

Location: Wami-Ruvu River Basin and Ruaha Sub-Basin; Morogoro Rural and other Districts, Tanzania

Objectives: Objective 1: Increase sustainable access to improved water supply for poor rural and small town dwellers in target geographic regions. Objective 2: Increase sustainable access to improved sanitation services and hygiene promotion for poor rural and small town dwellers in target geographic regions. Objective 3: Develop capacity of local government and NGOs to provide water, sanitation and hygiene services.

Objective 4: Increase sustainable management of watersheds and water resources quantity and quality.

Justification: This project is an example of integration that was done at a higher level and out of a desire to launch a program that addressed both WASH and watershed aspects of Tanzania’s water challenges. Thus, both objectives were prioritized equally. There were no interdependent activities on the critical path – the WASH interventions did not directly influence the watershed management nor vice versa for this project specifically, though the broader interdependency is recognized by the local government and the implementers.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Equal WASH/FC	Little/None

Project Number: 3

Project Name: Conservation of Priority Zones in the Valle de Bravo Watershed

Information Source: Procuena Valle de Bravo

Source Type: Primarily Conservation

Country: Mexico

Location: Valle de Bravo watershed, Amanalco, Mexico State, Mexico

Objectives: Reduce the environmental deterioration in the priority need zones of the watershed.

Justification: This is an example of a primarily freshwater conservation project that later required WASH components, in the form of rainwater catchment and dry toilet “eco-technologies” which alleviate WASH issues. The project vision was to impact the community to then reduce the impact on the forest. The eco-technologies were not thought as a solution for WASH, but more to reduce pressure of the communities on the forests. Thus, objectives remained primarily focused on conservation.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 2a: FC first + WASH later	Primary FC	Some

Project Number: 4

Project Name: Forest Corridor Restoration Project & Global Health Linkages to Biodiversity Conservation (note: project is ongoing)

Information Source: Jane Goodall Institute

Source Type: Primarily Conservation

Country: Uganda

Location: 10 villages in the Albertine rift region of Masindi District of Western Uganda in Africa

Objectives: Preserve the Budongo-Bugoma Corridor, which represents critical habitat for chimpanzees and reach young people with sensitization and education messages on water conservation and improved sanitation. As a demonstration project of the ABCG, this project will also reference the ABCG M&E framework for integrated projects and contribute to learnings on implementation of integrated projects.

Justification: This project started as a conservation project that was later integrated. The activities focused on conserving the riparian corridor forests are part of the ongoing “Forest Corridor Restoration Project” project. Once implementation was under-way, specific threats that could hinder the achievement of the success of the project and were related to WASH activities were identified and added onto the program as the “Global Health Linkages to Biodiversity Conservation” component of the ABCG II. The level of interdependence is related to some specific components of the project.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 2a: FC first + WASH later	Primary FC	Some

Project Number: 5

Project Name: Ghana/Ivory Coast Transboundary Community Water Management Project

Information Source: Global Environment & Technology Foundation

Source Type: Primary WASH

Country: Ghana and Ivory Coast

Location: Tano River Basin. Ghana: Western Region of Ghana, 5 communities in the Tano River basin selected from 4 Districts (Jomoro District; West District; Aowin-Suaman District; Sefwi Wiawso District). Cote d’Ivoire: Aboisso Prefecture of Cote d’Ivoire, 5 communities in the Tano River Basin selected from 2 Sous Sous Prefectures.

Objectives: To provide potable water and sanitation in select communities within the Tano River Basin and to improve the conservation of the basin headwaters. The overarching strategy to achieve this goal is to employ an integrated approach which promotes the sustainable use and protection of water resources in the Tano River Basin. The guiding principle of this project is to build upon existing initiatives, structures and institutions to maximize benefits and promote lasting results.

Justification: This project is an example of integration that was done at a higher level and out of a desire to launch a program that addressed both WASH and watershed

aspects of challenges in the Tano River Basin. Thus, both objectives were prioritized equally. There were no interdependent activities on the critical path – the WASH interventions did not directly influence the watershed management nor vice versa for this project specifically, though the broader interdependency is recognized by the local government and the implementers.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Unknown	Little/None

Project Number: 6

Project Name: Improved water access and increased participation in integrated watershed management of a community in Nicaragua

Information Source: WWF

Source Type: Primarily Conservation

Country: Nicaragua

Location: Citalapa community San Rafael del Sur county, Entre Rios Tamarindo and Rio Brito watershed, Managua

Objectives: Addressing the problem of lack of access to drinking water in one community, which in turn will have a positive effect on the community's health, and engaging the selected community (beneficiary) in reforestation activities to protect and conserve the water source, consequently strengthening the integrity of the watershed's ecosystems.

Justification: This project was launched as an integrated project and equally prioritized WASH and conservation objectives. The integrated watershed management would not be possible without the support of the community for implementation, and engagement of the community was enabled by the work to improve their water access. Thus, the conservation component was dependent on the water access component.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Equal WASH/FC	High

Project Number: 7

Project Name: Improved water access and livelihoods, and increased participation in integrated watershed management in the Mesoamerican Reef (MAR) Catchments

Information Source: WWF

Source Type: Primary Conservation

Country: Honduras

Location: Mesoamerican Reef Catchments - Manchagua sub watershed, San Pedro Sula

Objectives: Addressing the problem of lack of water access in one community, which in turn will have a positive effect on the community's health, and achieve the participation and commitment of the inhabitants of 5 selected communities to establish agroforestry systems to increase/restore the forest cover in the sub-watershed, consequently strengthening the integrity of the watershed's ecosystem.

Justification: This project was launched as an integrated project and equally prioritized WASH and conservation objectives. The integrated watershed management would not be possible without the support of the community for implementation, and engagement of the community was enabled by the work to improve their water access. Thus, the conservation component was dependent on the water access component.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Equal WASH/FC	High

Project Number: 8

Project Name: Improved water access and increased participation in integrated watershed management in the community-based tourism sector of the Mesoamerican Reef (MAR) Catchments

Information Source: WWF

Source Type: Primary Conservation

Country: Honduras/Guatemala

Location: Mesoamerican Reef Catchments

Objectives: The goal of this project was to improve water access in two communities, dependent on tourism; and increase the participation of the inhabitants of these communities in the integrated management of the watershed where their communities are located.

Justification: This project was launched as an integrated project and equally prioritized WASH and conservation objectives. The integrated watershed management would not be possible without the support of the community for implementation, and engagement of the community was enabled by the work to improve their water access for tourism purposes. Thus, the conservation component was dependent on the water access component.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Equal WASH/FC	High

Project Number: 9

Project Name: Improving School-Based Hygiene and Sanitation in Quirimbas National Park, Mozambique

Information Source: WWF

Source Type: Primary Conservation

Country: Mozambique

Location: Quirimbas National Park, Mozambique (three districts of Cabo Delgado Province – Macomia, Ibo and Quissanga)

Objectives: Improve the health and living conditions of people living in the coastal zones of Quirimbas National Park, through implementation of water, hygiene and sanitation infrastructure in schools and households, educational activities for behavior change.

Justification: WWF-Mozambique was already supporting Quirimbas National Park with conservation and governance activities, and WASH components were integrated into this existing support system. For this specific project, WASH and freshwater conservation objectives were prioritized equally. Integration is high because the improved ecosystem health of the coastal areas would not be possible without the WASH activities, specifically the CLTS approach (Community-Led Total Sanitation). CLTS involves community leaders and authorities to see open defecation as an undesirable practice that negatively affects the health, wellbeing and environment of their community. Note that this project is an example of integration with coastal areas rather than freshwater catchments, but in this case the coastal water resources were key to community livelihood (in contrast to health).

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 2a: FC first + WASH later	Equal WASH/FC	High

Project Number: 10

Project Name: Kenya Arid Lands Disaster Risk Reduction – Water, Sanitation and Hygiene (WASH) Program (KALDRR-WASH)

Information Source: Millennium Water Alliance

Source Type: Primarily WASH

Country: Kenya

Location: Northeast Kenya: Garissa, Isiolo, Marsabit, Turkana, and Wajir districts (all considered Arid and Semi-Arid Lands (ASAL) areas)

Objectives: Increase water storage capacity in arid lands. Improve WASH conditions at health facilities and nutrition centers frequently used during emergencies. Improve access and use of safe drinking water, point of use water treatment, good hygiene behaviors and sanitation facilities as a means of reducing diarrheal diseases in areas with recurrent emergency levels of malnutrition and around areas of improved storage

Justification: While this project dealt with more ground water management than surface water, it is a good example of integration of broader water resource management integrated with WASH. It also demonstrates an example of integrated programming that is framed as climate change adaptation. The project was interdependent because the ground water mapping work was necessary to identify resilient water sources for the community. Additionally, it was necessary to understand the community’s future use of water once access was provided in order to know the future stresses on these water sources. Finally, protection measures were required to ensure the continued quality and quantity of the water supplied through newly installed water schemes.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Primary WASH	Some

Project Number: 11

Project Name: Mali WASH Alliance

Information Source: Wetlands International

Source Type: Primarily Conservation

Country: Mali

Location: Mopti, Koulikoro, Sikasso

Objectives: Provide clean water and improved sanitation access, and improve hygiene behavior. Reduce the cost of those services.

Justification: This was primarily a WASH project that was integrated and recognized the need for water resource management from the beginning. The specific component of the project that was integrated was the micro-dam, which was prioritized to provide water access to the community and also needed the support of the water resource management/conservation work to be successfully implemented and managed by the community. The primary objectives remained WASH and the micro-dam work specifically exhibited interdependence on the water resource management and conservation work.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Primary WASH	Some

Project Number: 12

Project Name: Mi Cuenca – Integrated Basin Management in Central America

Information Source: CARE Guatemala

Source Type: Primarily WASH

Country: Guatemala

Location: Six microbasins from the municipalities of Tacaná, San José Ojetenam, Sibinal, Tajumulco and Ixchiguán, belonging to the Departamento de San Marcos

Objectives: Improve the ability of rural communities to face water-related impacts (droughts, floods, landslides and conflicts). Improve the access, service and use of water for consumption, domestic and productive purposes. Make sure the legal frameworks, public policies, customary laws and investments contribute to the comprehensive management of the water resource and recover the environment to favor families.

Justification: The project was launched with fully integrated WASH and freshwater conservation goals acknowledging this interdependence. The provision of long-term, sustainable water access for the community was dependent on the proper management of the basin and many of the water resource management work that was implemented. The conservation and water resource management objectives, both at a level of higher-level policy as well as implementation of reforestation, were also dependent on the community participation as well as an understanding of the community uses of the water source.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Primary WASH	High

Project Number: 13

Project Name: Mount Mulanje Community Watershed Partnership Program

Information Source: Global Environment & Technology Foundation

Source Type: Primary WASH

Country: Malawi

Location: Malawi: Rural communities in Traditional Authority Laston Njema, Mulanje District, and south-east Malawi

Objectives: Build toward long-term sustainable and equitable water supplies for all users of water originating on Mulanje Mountain by increasing the supply of potable water for household and irrigation use, improving governance of water resources, and

protecting and rehabilitating Mulanje watersheds through reforestation, better agricultural land management, and increased public participation.

Justification: This project is an example of integration that was done at a higher level and out of a desire to launch a program that addressed both WASH and watershed aspects of challenges. It is widely accepted that an equitable balance between resource use and protection can be achieved by managing water as a resource in the framework of a watershed. Thus, interdependence was present at a high level because broader WASH access is contingent on proper use and protection of the watershed. While the day to day activities were not interdependent, the overall idea was to look at the challenges faced in this watershed from multiple angles and to develop solutions on several fronts.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Unknown	Little to None

Project Number: 14

Project Name: One Health Initiative (note: project is ongoing)

Information Source: Conservation South Africa (affiliate of Conservation International)

Source Type: Primarily Conservation

Country: South Africa

Location: The headwaters of the Umzimvubu Catchment in South Africa's Eastern Cape

Objectives: The “One Health” initiative’s objective is to integrate water, sanitation, and hygiene (WASH) activities with livestock improvement and conservation programs to improve the health of people, animals and ecosystems. Conservation South Africa (CSA) is applying this framework in the upper reaches of the Umzimvubu Catchment to improve water resources sustainability and resilience to threats, including climate change. Another objective of this project is to share learnings throughout the region via the Healthy Catchment Alliance and also inform learnings around implementation of integrated WASH and freshwater conservation projects.

Justification: This project was launched as an integrated project and has equally interdependent WASH and conservation components, in addition to an added livestock component. Water security for the 1,000,000 people who depend on the river is dependent on restoration of the upper catchment. At the same time, in order for catchment restoration to be effectively implemented, the health needs of the community and the proper management of their livestock need to be addressed through the WASH and livestock components of the project.

4. Project Origin	5. Primary Objectives	6. Interdependence
Type 3: Integrated	Equal WASH/FC	High

Project Number: 15

Project Name: Rio Ayampe Water Fund

Information Source: TNC

Source Type: Primary Conservation

Country: Ecuador

Location: Rio Ayampe

Objectives: Establish a water fund as a long-term financial mechanism to ensure the quality and quantity of water, the conservation and recuperation of the ecosystem, the sustainable development of the local communities, and applied monitoring and investigation.

Justification: This project is a water fund that primarily serves to protect the quality and quantity of water for the broader use of communities in the watershed. Since water funds do not explicitly provide people with WASH access, they cannot in themselves be considered integrated projects (as discussed in Project 1). Rather, they are primarily freshwater conservation projects. However, this water fund is integrated because it incorporated WASH components, via eco-toilets, in one part of the watershed due to the need to reduce contamination at a critical location in the watershed. The need for this WASH intervention was identified and incorporated from the beginning, which is why the project is Type 3 rather than Type 2a.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 3: Integrated	Primary FC	Some

Project Number: 16

Project Name: Uganda WASH Alliance

Information Source: Wetlands International

Source Type: Primarily Conservation

Country: Uganda

Location: Western Uganda, Rwambu catchment

Objectives: Increase access to drinking water and improved sanitation for the community.

Justification: The WASH components, which remained the primary objectives of the project, depended on and later improved because of the conservation/IWRM work. Before the conservation and recharge interventions, the wells ran out of water during the dry part of the year. After the interventions to restore the surrounding wetlands, some of the boreholes no longer dried during the dry season. Although Wetlands International did not track the baseline data sufficiently to show the direct connection between the conservation and recharge interventions and the water restored to the boreholes, there is a strong link between these activities and the restored boreholes were attributed to the conservation work.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 1a: WASH first + FC later	Primary WASH	Some

Project Number: 17

Project Name: Working together for health and sustainability in the Nosivolo River

Information Source: Conservation International

Source Type: Primarily Conservation

Country: Madagascar

Location: 14 municipalities and 47 fokontany (villages) in Marolambo district, Eastern Madagascar (home to the Nosivolo River)

Objectives: Improve human health in the Marolambo district and the ecological health of the Nosivolo River.

Justification: This work first started as a conservation project in the Nosivolo River because of the unique fish species found there. However, it incorporated WASH components when it became apparent that reducing the human pressures on the fish populations could not be done without addressing the local community's need for WASH, especially improved sanitation practices. The overall objective of the project remained focused on freshwater conservation, with specific interdependence on WASH interventions to accomplish some of the conservation objectives.

1. Project Origin	2. Primary Objectives	3. Interdependence
Type 2a: FC first + WASH later	Primary FC	Some

Additional projects to note

There are additional integrated projects that were raised by WASH and freshwater conservation practitioners during interviews, but are not featured in detail either due to the time limitations of the research or because the projects have not yet started. These projects are listed here for reference:

Project Name: HSBC Water Program

Information Source: WaterAid India

Source Type: Primary WASH

Country: India

Location: Specific communities and areas of the Ganga River Basin: Delhi, Hyderabad, Pune and Kolkata (Earthwatch Institute India), WaterAid India (Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Bihar, and other states) and WWF India working throughout the basin.

Description and Relevance: HSBC has funded \$100 million from 2012-2016 for this project, which involves a partnership between WWF, WaterAid and Earthwatch. “The programme aims to improve water resource management in 10 key river basins and to provide access to safe water and sanitation to millions of people:

Earthwatch Institute India has four long-term research projects in Delhi, Hyderabad, Pune and Kolkata. HSBC employees have been engaged in Citizen Science Leadership (CSL) training in the four cities, and are helped to lead urban freshwater research and monitoring in their communities. In 2014 alone, 253 HSBC employees in India completed the training and by June 2015, 338 employees had done so. Following the training, CSLs participate in Fresh Water Watch (FWW) activities to generate data that could help scientific research and support more informed policymaking.

WaterAid India has provided more than 300,000 people with access to safe water and another 390,000 with improved sanitation across Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Bihar and other states.

WWF India has reached more than 277,000 people through its programmes, especially the three flagship campaigns — My Ganga, My Dolphin (Oct 2012); My Ganga, My Heritage (Dec 2012-March 2013), and Ramganga for life, Life for Ramganga (April 2013 onwards).”⁵⁹

⁵⁹ [“HSBC Water Programme.”](#) HSBC.

While each organization works in different regions of the Ganga River Basin, one location where both WaterAid and WWF are co-located is in the city of Kanpur. In this location, the two organizations target different issues and work at different levels of the community. For example, one of WWF's focus areas is to target the main sources of contamination. Along with human waste, WWF has identified leather tanneries as a key source and is therefore in the process of working with key brands on this issue. Meanwhile, WaterAid is focused on ensuring water security and sanitation access for communities, in alignment with the Swachh Bharat Abhiyan (Clean India Mission) campaign. WaterAid has focused efforts on both households as well as institutions and schools without water and toilet facilities.

The project is scheduled to end in 2016, and there is no indication that there will be follow-on work. However, if there is an opportunity to pursue a second phase of work in the Ganga River Basin, both WaterAid and WWF have identified potential areas where they could align efforts or even pursue work at the intersection of WASH and freshwater conservation. First, the organizations could align advocacy efforts because they are often working with the same stakeholders on their respective issues. Next, they could share information from their research activities, which involves extensive technical knowledge. Finally, they could collaborate to identify appropriate technical solutions to issues, such as simple, low-cost water testing and treatment for communities.

Currently, no formal conversations or joint proposals have been submitted by WaterAid and WWF to pursue work jointly. Understandably, both organizations are focused on what their teams need to accomplish in the currently scoped project. However, there is a willingness from both organizations to explore these intersections further. This example highlights the challenge of geographical mismatch between WASH and freshwater conservation work, as discussed in Section VI. It also highlights the opportunities for integration to be coordinated by a higher level organization, and the dual role of both funders and implementers to guide new possibilities for integrated projects.

More information about this project:

<http://www.about.hsbc.co.in/hsbc-in-india/community/hsbc-water-programme>

Project Name: Cerro Miramar

Information Source: WaterAid Nicaragua

Source Type: Primary WASH

Country: Nicaragua

Location: North Autonomous Region of the Caribbean Coast of Nicaragua (RACCN), Cerro Miramar and Sahsa Tingni river watershed area, located in the Tasba Pri indigenous territory in the municipality of Puerto Cabezas

Description and Relevance: WaterAid has worked in the North Autonomous Region of the Caribbean Coast of Nicaragua (RACCN) since 2011. Coverage levels in this region are strikingly low. “Only 18% of the population has sustained access to safe water, and 20% has access to adequate sanitation. These low rates are exacerbated by poor service functionality rates (up to 80% of water supply services are estimated to be non-functional)... As of 2014, the initial pilot program in the RACCN reached over 6,800 people with water and 4,000 with sanitation in 26 rural villages and 10 periurban neighborhoods in one of the most remote and marginalized regions of the country.”⁶⁰

Within the RACCN, Cerro Miramar and the Sahsa Tingni river watershed area are the main water resource for a growing number of communities. WaterAid seeks to strengthen the environmental management and conservation of these areas, which are threatened by the effects of climate change, farming techniques, and a growing population. WaterAid Nicaragua is currently pursuing funding for conservation and water resource management work to target three issues in this region:

“Environmental Awareness: There is a lack of environmental awareness, particularly amongst frontier agriculture communities in the indigenous territories due to the lack of environmental education for adequate management of natural resources and watersheds.

Water Resource Management: There is a significant reduction the flow and increased contamination of the water of the rivers in the communities of the RACCN, resulting in water shortages, disappearing aquatic fauna, and difficulties in water transportation due to sedimentation along riverbeds. This is associated primarily with the lack of forest coverage in the upper watershed of the rivers.

Forest Conservancy: Deforestation continues to be a major factor in the depleting water supply in the region. Forest destruction leads to the degradation of topsoil and reduces ground water aquifer recharge, which is a process vital to the sustainable supply of water for the communities.”⁶¹

While these conservation components of WaterAid Nicaragua’s work have yet to be funded, they provide an excellent example of necessary integration due to high interdependence between the protection of the water source and the WASH infrastructure supplying the community.

Project Name: Population, Health, and Environment (PHE) project in Lobeke, Cameroon (ongoing)

Information Source: WWF

⁶⁰ [WaterAid Nicaragua Country Program evaluation](#). WaterAid Nicaragua. Dec 2014.

⁶¹ Summary of WaterAid Nicaragua funding proposal provided by WaterAid staff, Jul 28, 2016.

Source Type: Primary Conservation

Country: Cameroon

Location: Lobeke National Park

High-Level Description: This is the third demonstration project supported by ABCG, which has a broader focus on Population, Health and Environment (PHE) beyond integration of WASH and freshwater conservation alone. Similar to the ABCG demonstration projects (See Section VII, Projects 4 and 14), this project provides another opportunity to apply the ABCG monitoring and evaluation framework⁶² to a project in the field. As this is a long-running project, the description below is based on an evaluation from 2008. Note that at the time of writing, this project has just begun the planning to integrate WASH guidelines and an agriculture/food security component.

For the PHE and WASH pilots, WWF works with community members and many local NGOs in Lobeke for community related work. The NGO partner for this activity is the Centre for Information and Training for Environment and Development or CIFED (Centre d'information et de formation pour l'environnement et le développement). In January 2016, WWF also started working with four more local NGOs to help have a wider reach geographically in the area and tackle more diverse set of sectors, including conservation and development.

“With over 10,000 plant species, of which nearly one in three is endemic to the region, and 1,000 bird and 400 mammal species, the Congo Basin is by any measure a global treasure trove of biodiversity. Home to forest pygmies, the region suffers an unusual confluence of human and environmental threats. The human population has a doubling time of less than twenty years, and an annual growth rate which may be the highest in the world. Life expectancy remains well below 40 years as disease is rampant and health care scant. Suffering is not unique to humans in the region. Poaching claims countless mammals daily while Ebola outbreaks reap half or more of affected gorillas. Concomitantly, logging, mining, and agriculture destroy yearly nearly a million hectares of forest canopy...

While nutrition is common to all programs, other health interventions are tailored to community needs. The aim of the project is to collaborate with partners to promote conservation integrated with healthcare and alternative livelihoods among communities living within remote forests in Cameroon and the Central African Republic (CAR). With these objectives, WWF and partners have innovated a program in and around two protected areas concentrating some of the highest elephant and gorilla populations in the Basin, Lobeke and Dzanga Sangha, core forests of the Sangha River Trinational (SRT) Conservation Area, a 28,000 square kilometer core conservation area within Central Africa's vast yet besieged rain forests...

⁶² ABCG (2014).

On the strength of superior partnering, an impressively trained and dedicated staff, and strategic village selection for PHE implementation, the Lobeke project has demonstrated potential for future sustainability.”⁶³

Project Name: The Euro-Med Participatory Water Resources Scenarios (EMPOWERS)

Information Source: IRC

Source Type: Primary WASH

Country: Egypt, Jordan, West Bank/Gaza

Location: See above

High-Level Description: “The overall objective of the EMPOWERS project is improved long-term access to water by vulnerable populations through more effective local integrated water resource management, with a more specific purpose of improving horizontal and vertical flows of information and influence between stakeholders in integrated water resource management in the Middle East and North Africa (MENA).

EMPOWERS will work directly in three countries which reflect the range of water situations in the MENA region. Egypt has very high per capita availability of water, but demand exceeds supply because of low irrigation efficiency. Jordan has the world's lowest per capita water availability. In the West Bank and Gaza, access to water is controlled by hostile authorities. Common features are the lack of involvement of stakeholders, the centralised nature of management and the fragmentation of responsibilities among many players. The principal target groups will be governorate and district water authority staff and community beneficiaries of pilot projects.

The main activities for the project are in the areas of:

1. Integrated management of local drinking water supply, sanitation and sewage
2. Local water resources and demand management (quantity and quality) within catchments areas
3. Irrigation water management
4. Use of non-conventional water resources
5. Preparation of national and local scenarios for the period until 2025 that enable precise objectives to be set and actions to be taken for sustainable water management”⁶⁴

⁶³ Carr, David. “Population, Health and Environment in Africa and Asia: An Evaluation of WWF’s USAID and Johnson & Johnson-Supported Projects.” WWF. 2008.

⁶⁴ “[EMPOWERS, improving local water governance.](#)” IRC. 2003.

Public Information:

“EMPOWERS, improving local water governance”:
<http://www.ircwash.org/news/overview-empowers>

“The EMPOWERS approach to water governance: guidelines, methods and tools”:
<http://www.ircwash.org/tools/empowers-approach-water-governance-guidelines-methods-and-tools>

Project Name: PRAA Peru (Proyecto de adaptación al impacto del retroceso acelerado de glaciares en los Andes tropicales, or “Project to adapt to the impact of accelerated glacial deterioration in the tropical Andes”)

Information Source: CARE Peru

Source Type: Primary WASH

Country: Peru

Location: Shullcas River sub-basin

High-Level Description: “CARE Peru focused on climate change adaptation that combines ancestral knowledge of families and communities with scientific information to strengthen the intervention strategies. These improve the capacity of the most vulnerable families and communities to adapt to the effects of climate change.”⁶⁵

Public Information:

“Integrated Management Plan of Water Resources in the Shullcas River sub-basin”:
<http://www.care.org.pe/wp-content/uploads/2015/06/Plan-de-Gestion-Integrado-de-Recursos-Hidricos-de-la-subcuenca-del-rio-Shullcas.pdf>

“Current and future water availability in the Shullcas River sub-basin”:
<http://www.care.org.pe/wp-content/uploads/2015/06/Disponibilidad-hidrica-actual-y-futura-Shullcas.pdf>

Articles about the work:

<http://www.care.org.pe/noticia/nota-aclaratoria-el-instituto-geofisico-del-peru-sede-junin-en-alianza-estrategica-con-care-peru-huancayo-instalan-pluviometros-y-sensores-de-temperaturas-en-la-sub-cuenca-del-shullcas/>

http://www.ongideas.org/en/ver_noticias.php?id=243

<http://diariocorreo.pe/ciudad/cuenca-del-rio-shullcas-es-considerado-en-pr-84694/>

⁶⁵ [“CARE PERU y el Ministerio de Vivienda Construcción y Saneamiento, impartiran conferencias en la VIII CUMBRE INTERNACIONAL *Agua y Cambio Climatico* - Iquitos.”](#) Author’s translation from article. IDEAS PERU. 2016.

VIII. Enabling Conditions for Integrated Projects

Through research of WASH and freshwater conservation integration case studies (see Section VII) and interviews with practitioners in both communities, several key themes emerged as conditions that enable integrated projects to be successful. This section provides an overview of these enabling conditions to assist funders and practitioners in both the WASH and conservation communities when evaluating a project's potential for integration.

Classifying the different types of integrated projects

Before reviewing the enabling conditions, we need to define the different types of projects to which they can be applied. One method of differentiating projects that have integration potential is by their stage (either current or future) and their primary focus (WASH or freshwater conservation). The table below depicts this categorization. Note that this framework is slightly modified from “Table 1. Project origin classification” in Sections III and VII. Rather than existing projects, this table is meant to classify different types of projects that have the potential to be integrated in the future.

“Current Projects” are those that are already in progress and were established with a primary objective of either WASH or freshwater conservation (Types 1 or 2). After applying the enabling conditions for integration to these projects, they can be classified as having high integration potential (Types 1a or 1b) or limited/no integration potential (Types 2a or 2b).

“Future Projects” are those that have yet to be implemented. Funders and implementers approach integrated projects in one of three ways: the primary concern is a WASH issue or a freshwater conservation issue, and so the project leads with this objective, while still achieving integration (Types 3c or 3e), or the WASH and freshwater conservation issues are of equal concern and result in an integrated project that prioritize both (Type 3d).

Finally, while they are not included in the outline of core cases, the enabling conditions could also be applied to completed projects, especially those that may lead to more advanced follow-on work that could provide the potential for integration.

Table 4. Project Classification Framework

Current Projects	1. Primarily WASH		2. Primarily FC	
	<i>Definition: launched as a WASH project and may have potential to integrate secondary FC goals</i>		<i>Definition: Launched as a FC project and may have potential to integrate secondary WASH goals</i>	
	After examining the enabling conditions, each type of project can be determined to have:			
	a. High Integration Potential	b. Limited or No Integration Potential	a. High Integration Potential	b. Limited or No Integration Potential
Future Projects	3. Integrated			
	a. Prioritized WASH Objectives	b. Equally Prioritized WASH and FC Objectives		c. Prioritized FC Objectives

This classification is an important first step to discussing integrated projects and reinforces several overarching principles of integrated projects.

First, an integrated project does not necessarily need to be integrated from the start. In fact, both WASH and freshwater conservation practitioners expressed that in some cases, integration of complementary WASH or freshwater conservation objectives *after* a primary WASH or freshwater conservation project is launched is the result of recognizing the interdependence of these objectives. The experience of Water for People, a predominantly WASH-focused NGO reflects this evolution. In recent years, an increasing amount of Water for People field staff have reported water quality issues in WASH interventions. In many cases, these issues are directly linked to erosion, sediment loads, and other contamination resulting from watershed degradation. In response to this experience from the field, Water for People is formally recognizing the link between WASH and freshwater conservation by including freshwater conservation metrics into their 2017 monitoring framework.⁶⁶

Second, a project can be classified as “integrated” even if WASH and freshwater conservation priorities are not considered equally. That is, an integrated project can still exhibit a foundational or primary emphasis in WASH or freshwater conservation. This principal is demonstrated by the sampling of case studies featured in the previous section (Section VII) of this report. In many cases, an integrated project that remains primarily focused on either WASH or freshwater conservation is the result of the initial concerns that led to the project’s development. For example, if a conservation NGO recognizes watershed degradation within an ecosystem biodiversity hotspot and the potential to work with the local community on protection or restoration, the conservation element is automatically the foundational focus of the project. As observed through conservation practitioner interviews, the NGO may design the project to be integrated after recognizing that WASH interventions are both needed by the local inhabitants and

⁶⁶ [“Sustainable Development Goals.”](#) Water for People. 2016.

contribute to the watershed's rehabilitation, but the primary focus of this integrated work remains freshwater conservation.

This principle also applies to projects whose integration extends beyond WASH and freshwater conservation to other objectives, such as food security or income generation. Particularly with large, integrated projects that have been developed over a longer timeframe, such as country programs of CARE International like Mi Cuenca (see Section VII, Project 12), integrated WASH and freshwater conservation objectives may comprise one auxiliary component of a project primarily focused on broader human development objectives.

Identifying these principles and the different types of integrated WASH and freshwater conservation projects helps explain the variation observed in existing integrated projects such as the case studies in Section VII. In addition, it provides a lens through which we can understand the varying degrees of integration potential that a project may have, which we now examine in more detail through the enabling conditions for integration.

Applying the enabling conditions for integration

The enabling conditions below are aggregated from the experiences of WASH and freshwater conservation organizations that have attempted to or successfully implemented integrated WASH and freshwater conservation projects. They were solicited and aggregated with the primary intent of being used to evaluate the integration potential of new projects (Type 3). However, given the aforementioned classifications of integrated projects, they can and should also be used to evaluate the integration potential of existing projects that are either primary WASH or freshwater conservation (Types 1 or 2). Several characteristics to note about these conditions are:

- **Each condition is especially important for integrated projects:** in many cases, these conditions are “common sense” criteria for selecting primarily WASH or freshwater conservation -focused projects. They can be applied to these projects without any intent of integration. However, based on the experience and lessons learned from both WASH and freshwater conservation organizations, these conditions are considered *especially* important requisites to support the successful implementation of integrated projects.
- **Each condition enhances integration potential, but is they are by no means requirements:** not all conditions must be met in order for a project to be a good candidate for integration. Rather, there are several conditions that can be considered of primary importance to enabling integration, and others that help reinforce integration but are not absolutely necessary for its success.
- **This is a non-exhaustive list:** these conditions were assembled from the input of WASH and freshwater conservation practitioners under time constraints and do not reflect all of the possible considerations for integrated projects.

Enabling conditions for integration

The conditions are outlined at a higher, conceptual level and then reinforced by justification gathered from interviews and illustrative examples. In these conditions, the term “implementing organizations” refers to the WASH and freshwater conservation organizations, in many cases non-profit organizations, that carry out the project in the field. “Funders” refer to the organizations that financially support these projects and can potentially be involved in planning and strategy, but not execution. A summary table of the conditions is below, which could easily be adapted to create check-lists or applications to help evaluate and compare the integration potential of projects.

Table 5. Summary Table of Enabling Conditions for Integration

Local Government Relationships and Involvement
A. Implementing organizations should have existing relationships with the appropriate government bodies (ministries of environment, health, sanitation, etc.) at the following levels: local, municipal/district, and national
B. Government leaders should have confidence in the project's objectives and be involved.
C. The appropriate level of government should contribute to funding a portion of the project.
Legal Framework
D. The legal framework of the country should enable work at the watershed or basin level.
E. The institutions should be in place to enable work at the watershed or basin level.
Cross-Sector Relationships
F. Implementing organizations should have relationships with or the ability to engage: local water service providers and water use sectors (such as agriculture or industry)
Community Involvement
G. Implementing organizations should have relationships with the local community and involve them in the decision-making process for the project.
H. The local community should be willing to invest financially in the interventions (especially WASH).
I. The local community should have experience maintaining other types of interventions and demonstrate an ability to maintain additional integrated interventions.
J. The local community should be willing to implement both WASH and freshwater conservation interventions.
K. The local community water user committee should have strong governance and administration of funds.
Supportive Funding, Timeframe, and Monitoring
L. Funders of integrated projects should be confident in the value of an integrated approach and willing to support longer project timeframes that do not provide instantaneous results.
M. Funds should be deliberately allocated to both the WASH and freshwater conservation objectives of the project.
N. Monitoring and evaluation frameworks should incorporate measures for both WASH and freshwater conservation objectives and encourage implementing organizations to demonstrate the value of integration.
Implementing Partner Network to Achieve Integration
O. Implementing organizations should build a network of implementing partners with the required range of skill sets and expertise to implement an integrated WASH and freshwater conservation project.
P. Implementing organizations should establish the specific roles and actions necessary to achieve integration and rely on specific guidelines or a third party to track progress toward achieving this integration objective.
Watershed Visibility
Q. There should be high visibility or attention paid to important water-related areas in the community (e.g. due to conflict related to poor resource management, high demand from a populated area, a frequent and direct interaction between the community and the watershed, cultural significance, etc.)
Demonstrated Interdependency
R. Interdependency should exist such that the freshwater conservation intervention is required to accomplish an objective of the WASH intervention that the WASH intervention could not achieve in itself (or vice versa).
Watershed Characteristics
S. The project should be located where there are lower barriers to success.
T. The watershed should be relatively easy to trace, define, and determine the hydrogeological characteristics.

Local Government Relationships and Involvement

- A. Implementing organizations should have existing relationships with the appropriate government bodies (ministries of environment, health, sanitation, etc.) at the following levels:
 - Local
 - Municipal/district
 - National
- B. Government leaders should have confidence in the project's objectives and be involved.
- C. The appropriate level of government should contribute to funding a portion of the project.

Justification: especially for integrated projects, local government support is key. Many organizations cited that past experience working with a local or municipal government on one type of project (e.g., primarily WASH or freshwater conservation) established the relationships and trust needed to implement a successful integrated project.

Relationships at the regional and national level are also key to incorporate governance into the project. This can help ensure that the model of integration achieved within the project can serve as a model for future governance that integrates WASH and freshwater conservation priorities. In addition, this engagement may result in the ability to engage municipal or national funding for the project.

Besides foundational relationships, many organizations cited local or municipal government confidence in the project, especially in its integrated approach, and involvement in the day-to-day work of the project as key drivers of success. Involvement is key to ensure the long-term sustainability of the project because these institutions can support the community mechanisms to maintain the WASH and freshwater conservation interventions. Water for People's model of facilitating the government's implementation of WASH interventions reflects this philosophy, and staff cited the municipal mayor of El Negrito's involvement and passion for that project as a key contributor to success (see Section VII, Project 1).

Financial contribution to projects from the appropriate level of government (whether local or municipal) is crucial to solidifying the government's commitment to the interventions and maintaining the respect and reputation of the government as a provider of services to community. CARE International's work in Guatemala and Peru exhibits this commitment to government relationships, long-term governance, and government financial contribution, which is a requirement for their projects (see Section VII, Project 12).

Legal Framework

- D. The legal framework of the country should enable work at the watershed or basin level.
- E. The institutions should be in place to enable work at the watershed or basin level.

Justification: although these conditions are seldom in place, implementing organizations emphasized the tremendous support they provide to integrated projects. In the examples cited, the policy may even be very new and have yet to be fully implemented, but its role in grounding a holistic view that enables integration is very valuable. Additionally, these frameworks are valuable because they establish (or are helping to establish) institutions that operate at the watershed level, thus allowing integrated projects to easily align with the country-wide strategy and build relationships with the institutional partners who will implement in the long term. Specific examples where policies enable watershed or basin-level work are in Peru, Uganda, and Kenya (see Section VII, Projects 10 and 16).

Cross-Sector Relationships

- F. Implementing organizations should have relationships with or the ability to engage:
 - Local water service providers
 - Water use sectors (such as agriculture or industry)

Justification: engaging and ensuring the commitment of local water service providers is crucial for integration, especially because these entities should take ownership and help maintain the WASH and freshwater conservation interventions in partnership with the community. Building the relationship with these entities is key because in many cases, they do not consider conservation of the water resources within the scope of their responsibilities and therefore may not support integration.

Engaging other sectors that are significant water users, such as agriculture and industry, is key to the application of IWRM and the long-term sustainability of an integrated project. Besides being significant users of water quantity, agricultural and industrial stakeholders can also play an important role in water quality – the positive or negative effect of which can either reinforce or hinder the watershed conservation objectives of a project. Both WaterAid and WWF cited work with these partners a crucial component to the sustainability of their WASH and freshwater conservation interventions because of the impact on both water use quantity and quality.

Community Involvement

- G. Implementing organizations should have relationships with the local community and involve them in the decision-making process for the project.
- H. The local community should be willing to invest financially in the interventions (especially WASH).

- I. The local community should have experience maintaining other types of interventions and demonstrate an ability to maintain additional integrated interventions.
- J. The local community should be willing to implement both WASH and conservation interventions.
- K. The local community water user committee should have strong governance and administration of funds.

Justification: community engagement is a crucial requisite to integrated project success, especially because integrated projects are inherently more advanced and in many cases more complicated. It is most helpful if the community has demonstrated success maintaining past interventions because the implementing organizations can have more confidence that additional WASH and conservation interventions can be maintained. The community's willingness to support both the WASH and conservation objectives of the project is also important – WWF practitioners seeking to implement integrated projects cited this as a crucial prerequisite because in some cases community leaders only wanted to implement the WASH interventions. The lack of commitment to a holistic, integrated approach that includes both WASH and freshwater conservation is an opportunity to engage the community in the benefits to an integrated approach, and discuss the possibility of addressing the WASH issues first with an agreement to address freshwater conservation issues in tandem. However it is arranged, the community's full commitment to both WASH and freshwater conservation is crucial to success.

The community's financial commitment and ability to manage the WASH interventions are considered by WASH organizations to be essential prerequisites to launching a project, and are even more important to integrated projects. If the community is able to successfully govern the WASH intervention, it is much more likely that the same community will successfully manage the conservation intervention as well.

Supportive Funding, Timeframe, and Monitoring

- L. Funders of integrated projects should be confident in the value of an integrated approach and willing to support longer project timeframes that do not provide instantaneous results.
- M. Funds should be deliberately allocated to both the WASH and freshwater conservation objectives of the project.
- N. Monitoring and evaluation frameworks should incorporate measures for both WASH and freshwater conservation objectives and encourage implementing organizations to demonstrate the value of integration.

Justification: funders play a crucial role in integration and can either help or hinder an integrated project with their requirements and confidence in the approach. Almost all interviewed organizations cited that they look for “mature” funders who have a “long view” of the potential impact of WASH and conservation interventions. In particular,

fundere who want to be engaged in the development and management of a project – and engage their own employees and stakeholders in the project’s journey – are infinitely more appropriate partners for implementation of integrated projects. The longer timeframes of integrated projects also require fundere to accept higher levels of risk and defend these timeframes to their management, customers, and sometimes even boards. Fundere who are willing to undertake this work contrast sharply to those who simply want to “write a check” and receive a positive report of the impact made in one year’s time. The continued evidence base supporting the value of integration, as well as testimonials from WASH or freshwater conservation organizations and partners like Coca-Cola implementing integrated projects, will help encourage more fundere to support integration.

Interviewed organizations pointed out that in many cases, measuring the impact of WASH projects can occur on a much shorter timeline than freshwater conservation projects, in some cases within one or several short years. In contrast, five years is typically considered a bare minimum to measure the impact of freshwater conservation projects. Moreover, to monitor the success of WASH systems in the long-term, monitoring should be funded for additional years as well. Thus, both WASH and freshwater conservation organizations seeking to implement integrated projects with lasting impact often have to educate fundere on the longer time horizons necessary to see the impact of conservation work.

All organizations interviewed emphasized that monitoring and evaluation frameworks play a key role in enabling integrated projects because they allow both WASH and freshwater conservation organizations to demonstrate the benefits of integration. Without the mechanism requesting organizations to report on the value add of integrating complementary WASH or freshwater conservation work, it remains an “extra” objective of a project that can occur if there is additional time or money dedicated to the project, which is seldom the case. This condition speaks to the power of incentives: without the proper incentives to report on success related to integration, both WASH and freshwater conservation organizations have no motivation to improve their expertise in this type of work. The ABCG monitoring and evaluation framework provides a helpful starting point for integrated monitoring and is currently being piloted in South Africa, Uganda, and Cameroon (see Section VII, Projects 4, 14, and the PHE project). Additional indicators to monitor integrated projects should align with the evolving indicator work for SDG 6.

Implementing Partner Network to Achieve Integration

- O. Implementing organizations should build a network of implementing partners with the required range of skill sets and expertise to implement an integrated WASH and freshwater conservation project.
- P. Implementing organizations should establish the specific roles and actions necessary to achieve integration and rely on specific guidelines or a third party to track progress toward achieving this integration objective.

Justification: Especially given the currently siloed nature of the WASH and conservation sectors, all interviewed organizations cited the need to find capable partner organizations to complement their abilities and implement integrated projects. Interviewees emphasized the value of local partners who understand the local context necessary to successfully implement both WASH and conservation, and who can help sustain the work in the long term. In some cases, these partnerships formed the foundation for future integrated work within the organization. For example, in order to effectively design and implement the KALDRR-WASH program, MWA created a partnership with Dutch groundwater experts to take a more IWRM-focused approach. Work through this collaboration has helped build the capacity and understanding within MWA to take a similarly integrated approach to future projects (see Section VII, Project 10).

Among implementing organizations, there is also the need to explicitly define the role of each organization, how specific work will help realize an integrated approach, and how progress toward integration will be monitored. The ABCG guidelines for WASH and freshwater conservation integration provide a helpful mechanism for planning and evaluating progress toward integration.⁶⁷ However, implementing organizations emphasized that the management of this broader integration is also key. Integration management can occur at the level of the implementing organizations themselves or at a higher level, where it can be communicated, monitored, and measured by a funder, a local government partner, or a third party whose specific objective is to serve as the driving force for integration. This was highlighted as a crucial role by several organizations implementing integrated projects. In some cases, implementers support local or municipal governments to build capacity and learn the characteristics of this role and broader IWRM so that they can serve as the unifying force that drives integration in the future. Once a municipal government reaches this point, it can identify the specific areas where it needs external support from WASH and conservation organizations. The work that Water for People supports in El Negrito provides an example of a municipal government that is beginning to take on the role of implementing a vision of integration (see Section VII, Project 1).

Watershed Visibility

Q. There should be high visibility or attention paid to important water-related areas within the community (e.g. due to conflict related to poor resource management, high demand from a populated area, a frequent and direct interaction between the community and the watershed, cultural significance, etc.)

Justification: the attention a community focuses on a water source is a very significant enabler of integration. For example, the Cerro Miramar watershed in in Nicaragua is the main source of water for Puerto Cabezas and has been the subject of conflict (see Section VII, the Cerro Miramar project), and therefore draws a high amount of energy

⁶⁷ Edmond, J., et. al. (2013).

and attention from the local community. This attention can serve as momentum to implement a more challenging integrated project. Another example is the Valle de Bravo watershed, which is valued not only because it supplies 30% of the water for Mexico City, but also because it is recognized for its natural beauty and reputation as a tourist destination (see Section VII, Project 3). Both of these characteristics help provide the energy necessary to launch an integrated project.

Demonstrated Interdependency

R. Interdependency should exist such that the freshwater conservation intervention is required to accomplish an objective of the WASH intervention that the WASH intervention could not achieve in itself (or vice versa).

Justification: especially when it has already been demonstrated, interdependency is a powerful motivator and requisite for integration. For example, Water for People field staff in multiple countries have reported to the headquarters organization that water quality or quantity issues have arisen in some project locations that are having a negative impact on existing WASH interventions and necessitate freshwater conservation work to reduce erosion and sediment loads. From another perspective, WASH interventions are often necessary to achieve holistic watershed conservation, which is frequently demonstrated by the example of water funds. For example, the Rio Ayampe water fund in Ecuador worked with a local community close to the taking point for the water supplying the municipality of Puerto Lopez because despite freshwater conservation work in the upper watershed, managing the large volume of human waste in the lower watershed was crucial to watershed health and water quality (see Section VII, Project 15).

Watershed Characteristics

S. The project should be located where there are lower barriers to success.
T. The watershed should be relatively easy to trace, define, and determine the hydrogeological characteristics.

Justification: given that integration of WASH and freshwater conservation is new, implementing organizations and partners should initially choose project opportunities with lower barriers to success, in order to later leverage successful demonstration examples and expand integration across the watershed. The physical location of the project can influence these barriers, and one watershed area where fewer barriers can exist is in the upper or middle part of a watershed. For example, focusing integrated projects in the middle of upper part of a watershed can enable the project to have a potentially greater impact at the watershed's source. It can also make the cross-sector partnerships required to implement the project less complicated because there are fewer users upstream compared to downstream. The key is to focus efforts on a limited number of stakeholders with the greatest impact so that project implementation is not overly complicated, and so that the stakeholders involved can be fully engaged by

implementers to understand the necessity of a holistic approach through WASH and freshwater conservation integration.

In some cases, organizations such as WWF have been successful by engaging with the upstream communities first. One reason cited is because communities located at the upper part of a watershed can have a more direct and regular engagement with the watershed itself, and therefore making the connection between the watershed's conservation and their water supply is somewhat more obvious. This is in contrast to engaging communities downstream in a watershed, who might not have as clear and visible a link to their water source.

This point does not mean, however, that integrated projects cannot or should not occur downstream or elsewhere. On the contrary, once a successful demonstration has occurred, integration should be applied in other key areas of the watershed, including downstream areas. This condition simply points out that in some cases, a project's location close to the source can be an easier path to integrated work.

The hydrogeological characteristics of a watershed can also facilitate integration. In Latin America, where watersheds can often be differentiated into smaller sub-watersheds or micro-watersheds, it can often be easier to trace and define a watershed that a specific community has an incentive to protect or restore. In contrast, in larger catchment areas, such as those in areas of Africa, it can be more difficult to narrow the focus of an integrated WASH and freshwater conservation project. Several interviewees cited these characteristics as one of the key reasons why implementation of IWRM has been applied more successfully in Latin America. However, even in cases where hydrogeological definition or segmentation is not possible, the ability to narrow the focus of a watershed to a specific area or group of users is helpful to accomplish integration, mainly because if the project becomes too large it can complicate and hinder implementation. Moreover, working with surface water, for which the characteristics are more easily identifiable and observable, is inherently easier to work with than ground water, of which the characteristics go largely unknown until there is significant investigation.

IX. Conclusion

This report will help the Coca-Cola System, other private and public sector partners, and the community of implementing organizations execute integrated WASH and freshwater conservation projects that have greater impact and longevity. Classifying the different types of integration provides insight into the motivations behind integration, which can help identify the momentum that drives a project's success. Applying these classifications to real-world examples of integration can provide references of integration to the WASH and freshwater conservation community and enhance the evidence base. This report's discussion of the policy, institutions, and research that enable integration, while not comprehensive, is a first step to identify where further legal frameworks or evidence base should be developed to support integrated work. Identifying the motivations of WASH and freshwater conservation organizations to pursue integrated work, in addition to the benefits and challenges from their perspectives, builds the case for further integration and also highlights specific barriers to integration that can be addressed in future project design and implementation. Finally, assembling a set of enabling criteria for integrated projects, while not prerequisites or requirements for success, serve to assist funders and practitioners in both the WASH and freshwater conservation communities when evaluating a project's potential for integration.

These tools will contribute to the implementation of more successful projects that integrate WASH and freshwater conservation and help both communities work toward accomplishing SDG 6.

Recommendations for additional research:

- More comprehensive review of the policy supporting integration (besides those identified in this report) and the different implementing organizations
- More comprehensive review of current projects integrating WASH and freshwater conservation
- Evaluation of the application of the enabling criteria by implementing organizations and partners

Appendix I. List of Interviewees and Sources

The list below contains practitioners who were interviewed (either in person, via phone, or via e-mail), or who provided information to support this research.

Organization	Interviewee or Information Source
Africa Biodiversity Collaborative Group (ABCG)	Rebecca Haagens
AgroEcology Fund	Daniel Moss
CARE	Segundo Davila
CARE	Sandra Isola
CARE	Sandra Mendoza
CARE	Amilcar Miron
CARE	Lourdes Mindreau
CARE	Stephanie Ogden
Catholic Relief Services (CRS)	Paul Hicks
Conservation International	Janet C. Edmond
Conservation International	Colleen Sorto
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	Sonja Berdau
Dutch WASH Alliance	Rashidah Kulanyi
FHI 360	Ron Clemmer
FHI 360	Tricia Petruney
Fundación FEMSA	Carlos Hurtado
Fundación FEMSA	David Moreno
Fundación FEMSA	Gabriela Torres Torres
Global Environment & Technology Foundation (GETF) - Former	James Dyett
Global Environment & Technology Foundation (GETF)	Naabia Ofosu-Amaah
Global Environment & Technology Foundation (GETF)	Kyle Sucher
Global Environment & Technology Foundation (GETF)	Tara Varghese
IRC	Catarina Fonseca
IRC	Patrick Moriarty

IRC	Ellyn Walter
Jane Goodall Institute	Peter Apell
Jane Goodall Institute	Alice Macharia
Jane Goodall Institute	Matt Morely
Millennium Water Alliance (MWA)	Rafael Callejas
Millennium Water Alliance (MWA)	Melkamu Jaleta
Millennium Water Alliance (MWA)	Doris Kaberia
Millennium Water Alliance (MWA)	Violet Moenga
National Resource Defense Council (NRDC)	Penny Primo
National Resource Defense Council (NRDC)	Sam Wicks
Procuencia Valle de Bravo	Sandro Cusi
The Coca-Cola Company	Gustavo Guillen
The Coca-Cola Company	Ben R. Jordan
The Coca-Cola Company	Carlos Pagoaga
The Coca-Cola Company	Triyono Prijosesilo
The Coca-Cola Company	Joe Rozza
The Coca-Cola India Foundation	Rajiv Gupta
The Four Returns	Thekla Teunis
The Nature Conservancy (TNC)	Samuel Barrêto
The Nature Conservancy (TNC)	Henrique Bracale
The Nature Conservancy (TNC)	Jaime Camacho
The Nature Conservancy (TNC)	Aldo Cardenas Panduro
The Nature Conservancy (TNC)	Gilberto Tiepolo
The Nature Conservancy (TNC)	Fernando Veiga
United States Agency for International Development (USAID)	Richard Volk
University of Vermont	Diego Herrera García
Water for People	Kelly Latham
Water for People	Ana Padilla
WaterAid	Vincent Casey

WaterAid

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Wetlands International

Wetlands International

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

World Wildlife Fund (WWF)

Robyn Fischer

Hannah Greig

Isabelle Herszenhorn

Rajeev KJ

Elizabeth Salvatore

Sonia Wheelock

Seriba Konare

Julie Mulonga

Lindsay Bass

Sarah Davidson

Marialivia Iotti

Karin Krchnak

Laila Petrie

Maria Amalia Porta

Nathalie Simoneau

Nicole Tanner

Dave Tickner

Appendix II. WASH and Freshwater Conservation Integration Case Studies

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1. Committee to Purchase the Micro-Watersheds (Comite de Compra de Micro Cuencas – COMIC)

Sources:

- Interview with Water for People Honduras staff
- WFP presentation materials on this project

WHERE and WHO

Where is the project located (city, country, region)?

El Negrito, Yoro, Honduras

What is the approximate funding amount?

All funds allocated to Water for People for this project fund the Water for People local staff person, who facilitates training and helps the local municipal government build their capacity for local management of water resources.

Who are the partners (donors/funders and implementing organizations)?

- Funders:
 - Municipality: initially contributed 20,000 Lempiras (~US\$874)
 - Communities: on an ongoing basis, each user contributes 10 Lempiras (~US\$0.43) to the water tariff per month
- Implementers: municipal watershed committee (COMIC – Comite de Compra de Micro Cuencas, or Committee to Purchase the Micro-Watersheds)

What is the timeframe of the project (months or years)?

This initiative started in 2014 and the objective is to continue the work until all of the micro-watersheds in El Negrito are protected and solely used for the production of sufficient and quality water for the communities.

WHY

What were the objectives of the project?

The objective of creating the COMIC was to establish an organization to protect natural resources and also unify the effort of the water committees affiliated with the Association of Water Administrative Committees. A key goal of the COMIC is to purchase 80% of the total drinking watershed area within 20 years.

What criteria/conditions led the project to be selected?

El Negrito is a municipality in northern Honduras (Departamento de Yoro) with over 50,000 people relying on over 90 potable water sources. Water systems are typically administered by community water boards, which are coordinated at the municipal level through an association of water boards. These organizations manage all aspects of the water service – tariff collection, operation and maintenance, major repairs, etc. This type of water system administration is common throughout Honduras and Latin America. In the case of El Negrito, watershed management is an integral part of system administration.

In 2013, the municipal mayor of El Negrito, Honduras, Delvin Leonardo Salgado Fuentes, led the campaign to create a municipal watershed committee (COMIC – Comite de Compra de Micro Cuencas) with the goal of (1) uniting community water boards in the protection of natural

resources for water security and (2) aligning the municipality with the national government's Institution of Forest Conservation (ICF), which was established through the 2008 Forest Law. The primary function of the COMIC is to purchase land to protect drinking water watersheds with money collected from the communities through an additional 10 Lempiras to the water tariff per month per user and from the municipality.

This region of Honduras is located 1,200,000 meters above sea level. The areas around the watershed are being rapidly deforested for coffee plantations, and there mining is common to extract the area's rich mineral resources. Prior to this initiative, the community did not prioritize protection of the micro-watershed. Rather, they focused on the nearby dam as their main source of water.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Yes, the conservation component is crucial to the long-term provision of potable water to the community, and these two themes cannot be isolated.

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

Specifically, the municipal mayor promoted this idea, which was adopted by the communities, executed by the COMIC, and assisted by Water for People and the ICF.

HOW

What are the key WASH components of the project?

Maintenance of quality drinking water for the community. Water for People also does full WASH programming in El Negrito, providing water catchment and storage tanks, distribution networks, household plumbing, and latrines throughout the municipality.

What are the key freshwater conservation components of the project?

Preserving the watershed by purchasing the land surrounding the watershed. The COMIC is aiming to purchase 80% of the total drinking watershed area within 20 years.

The committee purchases land that is both occupied by human activity (such as coffee plantations) and also land that is not occupied by humans. If there is human activity or coffee plantations, they work to restore native species that will be able to withstand the altitude. After purchasing the land, the group then works to legalize this area as a water production forest area that is protected.

Did one of these components come "first"?

The principal concern is around conservation of the land around the watershed, with the overall objective of maintaining water quality and quantity to ensure water security for the community.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The quality of the drinking water and the provision of water services are dependent on the preservation of the watershed through forest cover of the land around the watershed.

RESULTS and LESSONS

What objectives of the project were/have been met?

- 50 hectares have been purchased around micro-watersheds that are not yet declared water production forest areas
- 7 micro-watershed areas have been legally named water production forest areas

What objectives were/have been not met?

There are 90 water systems, and therefore approximately 90 micro-watersheds to protect. With 7 watersheds legally declared water production forest areas, more than 80 remain to be legalized as such.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

The amount of land purchased by the COMIC and the number of micro-watersheds completely free of occupants. The water committees are then charged with monitoring the protected areas to ensure they are protected from activity that will damage the forest cover. Other indicators such as the volume and quality of water from the micro-watersheds and the capacity of the water committees are also included. These and many more that relate to WRM and source protection are embedded in WFP's larger monitoring framework (<https://www.waterforpeople.org/stories/sdg>). These are indicators for all of our 30 districts, including El Negrito.

What were the main challenges of the project?

- Funding: they are finding it difficult to maintain the funding required to buy property within the micro-watershed area.
- Corruption concerns: because corruption is common in other organizations within Honduras, community members are skeptical that their money will contribute directly to the project and therefore hesitate to support it.
- Administrative and legal funds: funding is most needed to meet the administrative and legal needs of the project (e.g., GPS to measure and map the land area, legal fees to establish the areas as protected, etc.)

Based on the experience from this project, what are your recommendations for other integrated projects?

- The decision-maker is the mayor of the municipality: he/she must be conscious of the importance of the forest areas to the water supply and advocate for this work.
- The water committees: these committees must understand the important role of protecting the watershed area to have water of sufficient quality and quantity
- Value water as a resource: the water committee must value water as a resource and value the forest that maintains the water source
- Local application of integrated water resource management (IWRM): Water for People lowered broader IWRM practices to a more local level to work with the municipalities and the micro-watershed

2. Community WASH and Sustainable Water Management

Sources:

- “TCCC-USAID-GETF, Water and Development Alliance (WADA) 2010, Water and Development Alliance: Tanzania WADA Phase II, Implementation Plan for the Global Water for Sustainability Program”
- “Water and Development Alliance (WADA) Close-Out Report” (By: Global Water for Sustainability / Florida International University)
- Interviews with GETF staff

WHERE and WHO

Where is the project located (city, country, region)?

Wami-Ruvu River Basin and Ruaha Sub-Basin; Morogoro Rural and other Districts, Tanzania

What is the approximate funding amount?

The Coca-Cola Africa Foundation: \$1,097,600

USAID: \$1,100,000

Who are the partners (donors/funders and implementing organizations)?

- The Coca-Cola Africa Foundation
- Coca-Cola Kwanza (Coca-Cola Bottler)
- USAID/Tanzania
- ENVICON – local NGO
- University of Dar es Salaam
- Wami-Ruvu Basin Water Office
- Global Water for Sustainability (GLOWS)
- Florida International University
- CARE International
- World Wildlife Fund

What is the timeframe of the project (months or years)?

September 2010 – November 2015

WHY

What were the objectives of the project?

The WADA Tanzania Phase II project was originally designed as a three-year program to directly address the country’s pressing need for Water, Sanitation and Hygiene (WASH) services for the rural poor, while also addressing linkages between water supply and watershed protection and management. The principal objectives were:

- Objective 1: Increase sustainable access to improved water supply for poor rural and small town dwellers in target geographic regions.
- Objective 2: Increase sustainable access to improved sanitation services and hygiene promotion for poor rural and small town dwellers in target geographic regions.
- Objective 3: Develop capacity of local government and NGOs to provide water, sanitation and hygiene services
- Objective 4: Increase sustainable management of watersheds and water resources quantity and quality.

What criteria/conditions led the project to be selected?

Tanzania's national water policy recognizes the critical and inherently cross-sectoral nature of water-related issues in impacting every sphere, from the most basic human needs to the full realization of the nation's potential for development.

Although Tanzania has relatively abundant water resources, these resources are not evenly distributed. Poorly regulated water abstractions and limited capacity for management of water resources has resulted in decreased water security both for people in the City of Dar Es Salaam (which depends heavily on the Ruvu River) and for the environment (including Sadaani National Park at the mouth of the Wami River).

Tanzania also suffers from significant gaps in access to basic services of Water, Sanitation, and Hygiene (WASH). The negative impacts of these gaps in access to basic services fall disproportionately on the rural poor.

Selection of this location specifically:

These geographic locations for WADA Tanzania II activities were determined through a consultative process involving USAID/Tanzania personnel; The Coca-Cola Africa Foundation, through local representatives from The Coca-Cola Company and bottling partners; Tanzanian government officials; NGOs; and other stakeholders in Tanzania. A range of social, technical, financial, and logistical criteria were used to identify potential sites, including level of need for water services (safe water access), Government of Tanzania water sector development priorities, opportunities to leverage past and current investments through USAID/TZ and TCCAF initiatives, and ongoing work of implementing partners.

The program also provided opportunities to build on successes from the first WADA program in Tanzania, which targeted the Wami-Ruvu River Basin as a region of great importance for biodiversity conservation and for improvement of rural potable water supply. The WADA Tanzania II project was nested within a broader USAID/Tanzania initiative—the Integrated Water, Sanitation and Hygiene (iWASH) program—as a completely integral yet distinct component, allowing numerous opportunities for synergy of efforts and leveraging of funds.

The Wami-Ruvu River Basin is classified as a Priority II Basin by the Ministry of Water and Irrigation, and it has been the target of multiple USAID/Tanzania Natural Resources Management/ Economic Growth initiatives. The Ruvu River is the main source of water for Dar es Salaam. The headwaters of the basin include several blocks of the Eastern Arc Mountains, one of 25 globally important “hotspots”—areas distinguished by extraordinarily high species richness and concentrations of endemic species and facing exceptional threat from human activities.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

The WADA Tanzania II Program is designed to improve access to water supply and sanitation and promote better hygiene within a watershed management framework that benefits human populations and the ecosystems upon which they depend. It is widely accepted that an equitable balance between resource use and protection can be achieved by managing water as

a resource in the framework of a river basin. Thus, interdependence was present at a high level because broader WASH access is contingent on having the proper environmental flows, etc. While the day to day activities were not interdependent, the overall idea was to look at the challenges faced in this basin from multiple angles and to develop solutions on several fronts.

Who drove integration?

- **The project funder**
- **The implementing organizations**
- Other

The Water and Development Alliance is committed to developing and launching programs that address the needs of local communities and watersheds across the spectrum of water-related programming. This project was launched by USAID and The Coca-Cola Africa Foundation to take a well-rounded approach to Tanzania water challenges.

In addition, FIU/GLOWS, the lead implementing partner for this project, focused on providing water management services to people and ecosystems, including integrated water management policies, water supply, sanitation, and hygiene improvements, and research and education programs in the water sector. They took this approach for this and several other programs in their portfolio.

HOW

What were the key WASH components of the project?

- Objective 1: Increase sustainable access to improved water supply for poor rural and small town dwellers in target geographic regions.
 - Activity 1.1: Monitoring of previous WADA Tanzania I interventions and needs assessment for new drinking water supply interventions.
 - Activity 1.2: Implementation of water supply systems in targeted communities.
 - A total of 34 water supply points were installed
 - Activity 1.3: Development of Water Consumer's Groups to manage water supply points.
 - Eight Community-Owned Water Supply Organizations (COWSOs) were successfully formed, trained and registered to manage community water supply points
- Objective 2: Increase sustainable access to improved sanitation services and hygiene promotion for poor rural and small town dwellers in target geographic regions.
 - Activity 2.1: Monitoring of previous WADA Tanzania I sanitation and hygiene interventions and needs assessment for new interventions.
 - Activity 2.2: Promote improved hygiene and sanitation activities to poor, rural households.
 - Eighteen demo household latrines were constructed serving 114 people (55 men, 59 women). These latrines were part of a broader sanitation marketing initiative.
 - A total of approximately 14,000 people (~53% women/girls) were sensitized on hygiene and sanitation by CARE and the local implementing partners with the community mobilizers
 - Activity 2.3: Promote improved hygiene and sanitation activities to school children.
 - A total of 29 latrine blocks constructed with hand washing facilities in 15 primary schools
 - A total of 6,530 pupils (~53% girls) have gained access to improved school sanitation and hygiene

- LGA officials and 15 School committees in the project area trained in operation and maintenance of hygiene facilities
- Objective 3: Develop capacity of local government and NGOs to provide water, sanitation and hygiene services.
 - Activity 3.1: Coordinate WASH service delivery through local government and NGOs.
 - Five local NGOs coordinated by CARE (EWACO, TCRS, HAPA, RATIIS and INDIGO) in collaboration with District Zonal water officer were responsible for construction of water facilities
 - Activity 3.2: Participation of local government and NGO field staff in iWASH training sessions.
 - Training on planning and budget preparation conducted for four local NGOs
 - Activity 3.3: Participation of local government and NGO leadership in learning alliances.
 - A workshop on formation and registration of COWSOs conducted for NGO and district officials in Morogoro region.

What were the key freshwater conservation components of the project?

- Objective 4: Increase sustainable management of watersheds and water resources quantity and quality.
 - Activity 4.1: Increase the human capacity to sustainably manage water resources quantity and quality.
 - Three national level trainings conducted for basin and ministry staff on Geographical Information systems (GIS), Data Management and Analysis and Training of Trainers Social Assessment (Guidelines for Formation of WUAs). As a result, databases were established in all nine Tanzanian water basins. WUAs are being established - a total of 90 WUAs were reported to have been registered by the end of 2014, due to enhanced capacity and clear guidelines
 - The formation of a National Working Group on EFA was not successful.
 - Eleven students (five women and six men) sponsored in higher level studies in Integrated Sanitation and Management (MSc. Integrated Sanitation Management)
 - Activity 4.2: Increase the institutional capacity to sustainably manage water resources quantity and quality.
 - Four water dependent industries (Dodoma Abattoir, Tungi Sisal Estate, Kibaha Tannery and 21st Century Textile) enabled to evaluate their needs and to build their capacity in Environmental Management Systems for improved water and waste management – to reduce water use and improve the quality / reduce the quantity of effluent.
 - One WUA formed in Mkindo catchment and registered.
 - Under the main iWASH award, publicly accessible versions of the Water Supply and Sanitation Act 2009, and of the Water Resources Management Act 2009, were developed.
 - Activity 4.3: Augment the current knowledge base of water resources data.
 - The Wami River and Ruvu River EFA and Ruvu Estuary report were completed.
 - A study commissioned in 2010 under WADA Tanzania II proposed a River Classification System for Tanzania - the final report is being prepared for publication – to be completed by January 2015

Which of these components was the priority? (i.e., which came "first"?)

Chronologically, much of the work on the watershed management side was completed before the full implementation of the WASH access component. However, this was due more to partner capacity than to deliberate prioritization of one component over the other. While all activities were centrally managed by the FIU GLOWS team, each component was implemented by a different partner, so each component was on its own timeline.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

None had interdependent activities on the critical path – the WASH interventions did not directly influence the watershed management nor vice versa for this project specifically, though the broader interdependency is recognized by the local government and the implementers. However, there were interrelated components (e.g., ISM students were encouraged to study and report on activities under the WASH component).

RESULTS and LESSONS

What objectives of the project were/have been met?

Objectives one and two (assessment and provision of water, sanitation and hygiene interventions) reached most targets, including constructing 34 water sources, improving school WASH conditions, and sensitizing community members on improved hygiene and sanitation practices.

Objectives three and four (capacity building and watershed management) reached most targets. One of the greatest accomplishments resulting from this work was the EFA: USAID actually took a decision not to fund a major irrigation scheme in the upper Wami, based on the data and recommendation of the Wami EFA –an important breakthrough that was very well received in the WRBWO and by the Ministry of Water. Furthermore, based on the EFA work, the WADA Tanzania II Project funded a draft for Environmental Flow Methodologies Guidelines. At the time of the project's conclusion, these were being reviewed and formulated jointly with the Ministry of Water into the final version for the National EFA Guidelines.

What objectives were/have been not met?

One of the largest gaps was in the building of demonstration latrines under objective one: one of the challenges was that village government wanted the demonstration latrines to be built in public places, rather than in households. These public latrines were significantly more costly, and not an ideal demonstration for affordable household options.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes. Final Indicators:

- Number of hectares under improved natural resource management as a result of USG assistance
- Number of policies, laws, agreements or regulations promoting sustainable natural resource management and conservation that are implemented as a result of USG assistance
- Number of people receiving USG supported training in natural resources management and/or biodiversity conservation
- Number of people in target areas with access to improved water supply as a result of USG assistance
- Number of people in target areas with access to improved sanitation facilities as a result of USG assistance

- Number of policies, laws, agreements, regulations, or investment agreements (public or private) that promote access to improved water supply and sanitation and are implemented as a result of USG assistance
- Number of people receiving USG supported training in water supply, sanitation, or hygiene

What were the main challenges of the project?

None.

Based on the experience from this project, what are your recommendations for other integrated projects?

General recommendations:

- Integration and program design: During the design phase, all partners must agree on the objectives of integration and identify a reasonable scope of work, budget and timeline. Given that integrated WASH and watershed projects are less common in the water sector, this design and alignment phase is essential for success.
- Local implementing organizations: During the definition of sub-awardees more consideration should be given to the performance record of the individual in-country representatives/offices of organizations/NGOs, instead of the overall image that international organizations/NGO have

Water, Sanitation and Hygiene Interventions (Objectives 1 and 2):

- Community selection: iWASH Program moved to the demand driven approach where communities were 'self selected' and had to demonstrate their 'demand' or commitment. Overall this has been a more successful approach, although it may disadvantage the poorer and more remote communities.
- Implementing partners: It would be advisable to work with experienced partners for water supply interventions, unless considerable investment is available for capacity building
- School vs. household sanitation: The project concept was to mobilize communities to address the school sanitation issues, and then use this as an entry point for promoting household sanitation. Completion of the SWASH interventions, and community water supply was slower than anticipated, and the marketing campaign for household sanitation did not take off. In retrospect household sanitation interventions could have started in communities at the beginning of the project – possibly school WASH and water supply interventions could be used as an incentive for improved community sanitation.

WASH Capacity Building (Objective 3):

- Capacity building: Future efforts should account for local partners' capacity levels and leave sufficient time for capacity building within the life of the project.
- Local government ownership: Despite the fact that working through local government can be slow and frustrating, in fully engaging with the LGA, the project managed to engender a sense of ownership.
- COWSO legal framework: One of the key challenges facing the project was the formation and registration of COWSOs to manage the community water supply. Although the Water Supply and Sanitation Act 2009 makes provision for COWSOs, there was no mechanism in place for proper formation or registration.

Watershed Management (Objective 4):

- Training capacity: One challenge is that basins and the Ministry of water have high staff turnover, so capacity built by training courses can be lost. The development of clear

guidelines, and the Training of Trainers can help to ensure that skills and knowledge are passed on.

- EFA expertise: Those who participated in the Wami and Ruvu EFAs have formed the core of Tanzania expertise in EFA. They have now carried out EFA studies on the Mara and on the Kilombero river in the Rufiji basin. Other younger scientists have joined some of the studies, so skills are also being passed on. iWASH was requested to support the development of National Environmental Flow Assessment Guidelines. A preliminary report was completed in 2013, and currently been formulated into official national guidelines. The challenge still remains to get the EF recommendations gazetted, effectively monitored, and used to protect and conserve the ecology and environmental services of rivers.
- Academic support: It would be good to support the curriculum for the MSc in Integrated Sanitation Management, not just the students, and especially to take a more proactive role in supporting students to identify and design their research component
- Water User Associations:
 - From the work with WUAs three key lessons emerged:
 - A WUA catchment has to be a manageable size to enable the WUA leaders to move around and communicate with communities in the catchment. Hydrological catchments can be too big to manage effectively, and too diverse in terms of the WRM issues – a WUA is more likely to function effectively if the members have shared concerns.
 - Existing conflicts within the catchment can undermine the formation of a WUA. In the case of Mkindo the pastoralist village of Kambala opted out of the process as they felt they were discriminated against; conflict between farmers and herders in that area continues.
 - WUAs will need ongoing support, and this must come from the BWO. Capacity building of the BWO is critical if they are to be able to continue effective support.
 - Communications: simpler more targeted communication materials are required for the general public – short leaflets, posters, and even radio messages.

3. Conservation of Priority Zones in the Valle de Bravo Watershed

Source: Interview with Procuencia Valle de Bravo staff

WHERE and WHO

Where is the project located (city, country, region)?

Valle de Bravo watershed – Amanalco, Mexico State, Mexico.

What is the approximate funding amount?

On average 6M pesos was invested annually (approx. US\$300,000)

Who are the partners (donors/funders and implementing organizations)?

Funding sources:

- Large foundations like FEMSA, Pedro y Elena Hernández, Rio Arronte
- Private businesses under their social responsibility programs: Televisa, BBVA-Bancomer, GNP and others
- Individual donors under the program "change a family's life"
- Procuencia funds

Partner implementing organizations: Procuencia Valle de Bravo, Gobiernos Municipales, Gobierno del Estado de México, CONAGUA

What is the timeframe of the project (months or years)?

2009 - ongoing

WHY

What were the objectives of the project?

Reduce the environmental deterioration in the priority need zones of the watershed

What criteria/conditions led the project to be selected?

Valle de Bravo watershed issues and concerns

- Procuencia executed an Ecological Land Use Plan (Plan de Ordenamiento Ecológico Territorial) "Plan de Ordeanamiento y Ecologico Territorial" to analyze the territory and determine the natural state of the land before industrialization and extensive agriculture
 - Mapped and understood the priority zones: marked by a high lack of trees, very unique biodiversity, or high anthropological development of housing
 - Specific environmental problems in the watershed and their causes were identified in the Ecological Land Use Plan (Plan de Ordenamiento Ecológico Territorial) and other existing diagnostics
 - Indexes of the degradation of water, soil, and air
 - Reduced forest coverage (because the local people used a large amount of firewood)
 - Living conditions of the population and the anthropogenic pressure on the ecosystems

Importance of the Valle de Bravo

- Valle de Bravo is of crucial importance in water and electricity
 - Artificial dam built in 1950s for electricity production
 - With water crisis for Mexico City, this dam became even more important
 - Valle de Bravo supplies Valle de Mexico watershed and other watersheds
 - Supply area to provide 30% of the water for Mexico City

- 2.5M people depend on this water
- The volume of water provides energy for all of the city
 - Cheaper energy and results in important savings for all of the city
- Conservation motivated by tourism/leisure activities and reputation for scenic beauty:
 - The area became popular for sailing, aquatic sports, etc.
 - Valle de Bravo converted into an area where people came to spend the weekend
 - Rise in development - wealthy people invested in properties
 - Put more pressure on conservation to stop the deterioration - they don't want it to become another Mexico City
 - The government is also invested in preserving the area

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent (i.e., the WASH component needed the conservation component to be successful, or vice versa)**
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

1. Training on the use of three eco-technologies introduced: rainwater catchment, low-burning wood stoves, dry toilets
2. Training on personal and family hygiene
 - They provided technical assistance and training (community members had to pay for 10% of the materials)
 - They evaluated many different designs for these technologies and selected robust designs easy to construct, easy to use and little maintenance
 - Accompanied the community for the long-term to ensure adoption

What were the key freshwater conservation components of the project?

1. Prevention of widespread pollution of bodies of surface water
2. Monitoring the quality of water in springs and rivers
3. Reduction of deforestation and of greenhouse gas emissions

Did one of these components come "first"?

The principal objective of Procuencia Valle de Bravo is conservation.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The conservation component requires the WASH component. The project vision was to impact the community to then reduce the impact on the forest. The eco-technologies were not thought as a solution for WASH, more to reduce pressure of the communities on the forests.

RESULTS and LESSONS

What objectives of the project have been met?

- The hard and numeric objectives were completed (number of eco-technologies installed, hectares of agricultural land under sustainable management, quality and robustness of the water quality monitoring data).
 - 3,800 families benefitted from the eco-technologies
 - Rain water catchment technology provided to communities: the change is so radical in the lives of women in the community, see this very directly in their life
 - The percentages of adoption are the strongest indicators:
 - 75%: use the rainwater catchment and storage
 - 90% use the wood saving stoves
 - 80% use the dry toilets (a very high percentage)
- In ecosystem terms, the situation of the watershed has not gotten worse, but the objectives are not static and are adjusted as necessary.
 - They have accomplished thousands of hectares of forest preservation and restoration

What objectives have not been met?

- Scaling/replication of the interventions: the communities were not able to replicate the model throughout the entire community (i.e. for members who did not receive the technology) - they depended on Procuencia to bring the solution to the community

How are project outcomes measured?

- Comparisons to baseline data
- Surveys/polls
 - Had to get a lot of qualitative data from the surveys
- Measurements and observations of social and environmental variables in the field
- Procuencia returned to work with communities 5 years after they provided the infrastructure to guarantee more adoption, which was very successful

Did monitoring integrate conservation as well as WASH metrics?

Yes, both.

What were the main challenges of the project?

- Financing
- Development of people from the community so they were qualified to implement the project
 - All of the trainers were beneficiaries of the program (people in the community that have so appreciated the changes in their life that they wanted to collaborate and work with them)
 - That has been a big strength of the program, but challenging to implement
- Publicizing the results to incentivize replication of the intervention throughout the community and to get more funding
 - The publicity of their programs they did mouth-to-mouth in the community
 - The community members (women) saw the benefit of the technology and how it changed their life
- Clarity on the exit strategy of the NGO and certainty around the self-management of the community
- At first, convincing the community to work with them

- It was not the first time someone has tried to convince them to do eco-technology
- Government introduced but without technical assistance, did not train them, and did not help solve the problem of lack of water in their homes
- It was difficult to break the skepticism of the people that these supports didn't work

Based on the experience from this project, what are your recommendations for other integrated projects?

- Clearly define the capacities and strengths of the executing organization regarding its knowledge of the diverse elements to integrate
- Clearly define the financial needs to carry out integrated projects, because it is much more complicated than doing discrete projects
- Have a long-term intervention strategy and a clear exit strategy for the NGO that promotes community self-management in the long-term

4. Forest Corridor Restoration Project & Global Health Linkages to Biodiversity Conservation (ongoing)

Source: E-mail responses from Jane Goodall Institute staff

WHERE and WHO

Where the project is located (city, country, region)?

- 10 villages in the Albertine rift region of *Masindi* District of Western Uganda in Africa. Map of the *Budongo-Bugoma* Corridor is inserted below.

What is the approximate funding amount?

- USD 114,000

Who are the partners (donors/funders and implementing organizations)?

- Funder: USAID ABCG
- Implementer: the Jane Goodall Institute
- Local Partners: *Masindi* district local government, *Budongo* sub county local government as well as the local parishes
- Community Based Organizations: *Kasongire* Community Development Association (KACODA) and *Siiba* Conservation and Development Association (SICODA) will be engaged in outreach activities

What is the timeframe of the project (months or years)?

2.5 years.

WHY

What were the objectives of the project?

- Preserve the Budongo-Bugoma Corridor, which represents critical habitat for chimpanzees
- Reach young people with sensitization and education messages on water conservation and improved sanitation

What criteria/conditions led the project to be selected?

This area is known as the *Budongo-Bugoma* Corridor, which represents critical forest habitat for the chimpanzees JGI seeks to conserve. Loss of the forests threaten the survival of viable chimpanzee populations and vital ecosystem services such as carbon sequestration and storage, water catchment protection, soil fertilization, clean water supply, and provision of firewood, food, and medicinal plants. Since the riparian forests are the main source of water for surrounding communities and the private companies downstream, the impact of riparian

degradation increases tension between different users (agriculture, industrial, domestic) as water supplies diminish and, in some cases, access to water is lost. Diminishing water volume is exacerbated by inadequate availability of boreholes and wells in the area.

Why did the project integrate WASH and freshwater conservation goals?

- **To test a new methodology**
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

- Work with 10 schools to reach young people with sensitization and education messages on water conservation and improved sanitation
- Provision of access to clean and portable water to communities and schools through rainwater harvesting tanks, and spring protection.

What were the key freshwater conservation components of the project?

- Conserve the *Budongo-Bugoma* Corridor, which represents critical habitat for chimpanzees.
- Importance of the protection of the *Siiba* river catchment which is south-west of *Budongo* Forest Reserve.
- Maintaining the integrity of riparian forests is also crucial for promoting integrated conservation and sustainable livelihoods. If communities are forced to make decisions in the face of a water supply crisis, the opportunity to engage communities in conservation strategies that will better protect their interests in the long-term will be lost.

Which of these components was the priority? (i.e., which came "first"?)

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The activities focused on conserving the riparian corridor forests came first and are part of an ongoing project called the "Forest Corridor Restoration Project" Once implementation was under-way, specific threats that could hinder the achievement of the success of the project and were related to WASH activities were identified and added onto the program. This is identified as the "Global Health Linkages to Biodiversity Conservation" component of the ABCG II.

RESULTS and LESSONS

The project is still in the data collection/initiation phase so no lessons have been learnt yet. However, below are some lessons and feedback from a previous project that integrated WASH activities.

- Use of schools clubs such as the Roots & Shoots club that promotes tree planting, conservation of environment (including combating deforestation, prevention of bush burning), proper management of waste, hygiene including cleaning of pit latrines, is a good mode of outreach to the youth and their parents about the project. Exposure through excursions for both pupils and their parents to JGI environmental education center, viewing environmental education films, and cleaning the environment was also a form of outreach to complement the existing ones.
- The involvement of local communities through formation of committees (Water User Committees) and groups (Collaborative Forest management Groups) and relevant local government technical staff in project activity implementation reduced the cost of operations and therefore enhanced project efficiency.
- Any unresolved issues in one activity have the ability to jeopardize full implementation of the project. For example, if the project implementers do not deliver any activity as promised/planned (especially tangible benefits e.g. renovation of water sources), it could jeopardize implementation of subsequent activities.
- The project needs to maintain geographical scope in order to have impact, despite greater need for services and demand by neighboring communities. If this does not happen, it will thin out the project's impact.
- Water provided a great convergence factor for balancing conservation and livelihood priorities; it is a win-win panacea for human-biodiversity coexistence and thus catalyzes buy-in from communities to protect water catchment forests which are also biodiversity habitat.

What objectives of the project were/have been met?

No objectives have yet been achieved since the project is in its early stages, however, 'process factors' and achievement of milestones demonstrate an incremental change towards the objectives are provided below.

- Feedback from the project imitation and engagement meetings demonstrate that communities recognize and are appreciative of the planned protected springs and rainwater collection points as a much needed alternative to the current situation thus saving time, increasing water access, and reducing risks associated with collecting water from the forests;
- Preliminary work of the WASH project e.g. water quality assessment of existing water sources; and WASH focused village meetings, surveys and focus group discussions has elicited positive response since these services have never been offered in this area before.
- Project has been fully integrated into the district planning framework by co-opting and engaging district water, natural resources, and health offices in program implementation
- Pre-evaluation and baseline information on the level of knowledge as well as attitudes and practices have been established and provided the basis for tailoring of awareness strategies. The communities and students actively participated in identifying local issues/problems, and proffering solutions

What objectives were/have been not met?

- See above

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes. In addition to the indicators below, we also refer to the ABCG Freshwater Conservation and WASH Monitoring and Evaluation Framework and Indicators.⁶⁸

- "% of Households (HH) with access to potable water; % of population using protected springs with a total collection time of 30 minutes or less for a roundtrip including queuing."
- "% of Households (HH) with access to potable water; % of population using water tanks with a total collection time of 30 minutes or less for a roundtrip including queuing."
- # of water sources with physio-chemical and biological parameters within recommended limits.
- # of functional water management committees trained in management and maintenance of water and sanitation infrastructure; % of positions held by women and youth in water management committees
- #of community based artisans trained and able to repair and renovate water infrastructure
- Proportion of forest area managed primarily for water protection
- "# of students demonstrating awareness of WASH related-practices; # of schools reached with WASH sensitization campaigns; % of targeted primary schools with a handwashing facility with soap and water in or near sanitation facilities"
- "# of villages reached with WASH sensitization campaigns; % of the population practicing safe water handling practices to minimize contamination; % of the population practicing safe water handling practices to minimize contamination; % of population using 'basic' sanitation at HH level; % of HH with 'basic' handwashing facilities with soap and water"
- # of villages and schools reached with WASH sensitization posters and material

What were the main challenges of the project?

- Continued demand and pressure for the program to serve additional villages so as to meet the challenges posed by lack of access to clean and potable water. We have received requests from communities and local leadership to expand program activities to villages neighboring those that are the focus of the project.
- The multifaceted/multi-stakeholder nature of integrated projects makes it a slow protracted process, which is critical for its success, but unfortunately does not auger well with donor timelines.

Based on the experience from this project, what are your recommendations for other integrated projects?

⁶⁸ ABCG (2014). [ABCG freshwater conservation and WASH monitoring and evaluation framework and indicators - Draft](#). Washington, DC. Africa Biodiversity Collaborative Group (ABCG), United States Agency International Development (USAID).

- Integrated projects heavily rely on socio-economic alternatives and incentives to make conservation gains; the key recommendation is that these alternative and incentives should be, or have to be perceived by the beneficiaries, as competitive or complementary to whatever they are trading-off.
- The choice of project interventions and how they are implemented are critical to project success and should therefore be determined through stakeholder participation in all stages of the project. This will ensure that the project addresses the needs, priorities and aspirations of the target beneficiaries; it enhances the sense of ownership of project processes and products by the beneficiaries; and most importantly it localizes externally fabricated/promoted objectives.

5. Ghana/Ivory Coast Transboundary Community Water Management Project

Sources:

1. "Ghana/Ivory Coast Transboundary Community Water Management Project," USAID/West Africa and Coca-Cola Equatorial Africa Territory
2. WADA (Water & Development Alliance) West Africa Close-Out Report & Deliverables: Trans-boundary Community Water Management Project, Presented to Global Environment & Technology Foundation by CARE International, Gulf of Guinea Ghana, March 31, 2009

WHERE and WHO

Where is the project located (city, country, region)?

- Tano River Basin
- Ghana: Western Region of Ghana, 5 communities in the Tano River basin selected from 4 Districts (Adusuazo & Ghana Nungua in Jomoro District; Pantooso in Wassa Amenfi West District; Jomoro in Aowin-Suaman District and Nsawora in Sefwi Wiawso District)
- Cote d'Ivoire: Aboisso Prefecture of Cote d'Ivoire, 5 communities in the Tano River Basin selected from 2 Sous Sous Prefectures (M'Possa in Mafere Sous Prefecture; Nougoua - Tanoé, Kongodjan-Tanoé, Saykro and Ehania-Tanoé in Noi Prefecture)

What is the approximate funding amount?

\$500,000 total

- USAID Africa Bureau(\$60,068)
- TCCC Foundation – Atlanta (\$40,524)
- TCCC Foundation – Africa (\$149,408)
- USAID Mission (\$250,000)
- In kind community contribution - Planting of 13,631 timber trees of various species along the Tano river basin
- by communities, land released for construction of latrine infrastructure, labor etc – (\$78,434)

Who are the partners (donors/funders and implementing organizations)?

- WADA Representation: Coca-Cola, USAID West Africa
- Implementers: CARE Gulf of Guinea, Conservation Foundation, Community Development Consult, Project Planning & Management Network (PROMAG), SOS Forests -Ivory Coast
- External partners: District Assemblies (Sefwi Wiawso, Aowin- Suaman, Wassa Amenfi West, and Jomoro), Sous Prefectures (Mafere and Noi)

What is the timeframe of the project (months or years)?

20 months (1st July , 2007 – 28th February , 2009)

WHY

What were the objectives of the project?

To provide potable water and sanitation in select communities within the Tano River Basin and to improve the conservation of the basin headwaters. The overarching strategy to achieve this goal is to employ an integrated approach which promotes the sustainable use and protection of water resources in the Tano River Basin. The guiding principle of this project is to build upon existing initiatives, structures and institutions to maximize benefits and promote lasting results.

- Objective 1: To increase provision of water supply services and improve sustainable management of community delivery systems through community-based initiatives.
- Objective 2: To increase access to handwashing and sanitation facilities and promote hygiene behavior change in schools
- Objective 3: To strengthen government and civil society capacity for collaborative water resources management at local and river basin levels.
- Objective 4: To improve watershed management within the Tano River Basin

What criteria/conditions led the project to be selected?

Drivers to work with existing projects:

The guiding principle of this project was to build upon existing initiatives, structures and institutions to maximize benefits and promote lasting results. Communities and districts on the Ghanaian side were already benefiting from natural resource management capacity building work under CARE's "Forests" program; this work was used as a basis for launching activities to strengthen community and district level capacity to manage water issues. Some of the existing USAID activities that are expected to work with this project include: The USAID/Ghana Sustainable Mining Alliance, the USAID/Ghana Government Accountability Improves Transparency (GAIT) program, and the USAID/WA biodiversity activities within the same transboundary zone of the Community Watershed Protection Plan (CWPP).

Drivers to focus on governance:

Governance of natural resources, particularly management decisions relating to resource allocation and utilization, are usually in the hands of central government agencies. Many of the agencies in both countries lack the means and capacity and/or will to effectively manage the resources. Consequently, much needed services are often not adequately provided. Moreover, in the proposed project area, communities, traditional leaders, government and the private sector have all been affected by violent conflict around issues associated with land access, logging, mining and water contamination. Civil society organizations and local government have direct roles to play in NRM, but they are also frequently lack the means and capacity to manage or are prevented from doing so. Strengthening the capacity of local government and communities to manage natural resources can help improve the benefits accruing to those communities and reduce the potential for conflict.

Drivers to focus on watershed management:

In all, there are approximately 20 tributaries that feed the Tano River at its headwaters; some of these are severely threatened from land clearing and associated erosion. The effects of environmental degradation in the headwaters is felt downstream. This part of the Tano River watershed is also proximate to the (Newmont Gold Ghana) NGG operations. While NGG has established limited development activities within the communities, there has not been enough focus on conserving the riparian zones.

In the CWPP Transboundary area, the Water Research Institute of Ghana notes that annual rainfall and discharge rates have been decreasing during the past few decades. Although there is no scientific evidence to support such a conclusion, these climate trends are also locally attributed to widespread deforestation and land use changes in and near the watershed. A recognition of the actual adverse impacts of deforestation on soils, water quality, and biodiversity, as well as these cultural beliefs in impacts on rainfall, have both contributed to the Regional Coordinating Council of Brong Ahafo Region and traditional chiefs' elaboration of a program to reverse degradation of the Tano River watershed area. That program aims to:

- Create 100m buffer strips along the banks of Tano River and 30m along all tributaries;
- Initiate agro-forestry activities in the buffer strips;

- Prohibit farming close to the river and its tributaries;3
 - Prevent wild fires;
 - Raise public awareness through education campaigns; and
 - Explore a financial compensation mechanism as an incentive for better management practices
- The Program launched by the Regional Coordinating Council of Brong Ahafo Region was developed by the local institutions but implementation has so far been very limited due to lack of funding for the program. CARE will through the CWPP Program assist the local institutions in implementing their plan including the above mentioned activities.

Drivers to focus on WASH in schools:

In most schools there is no water for handwashing after visiting the toilet as well as an insufficient number of latrines. Obviously, lack of adequate sanitation and water facilities poses a threat to the health of pupils and staff of the schools;

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

The program was designed to provide potable water and sanitation in select communities within the Tano River Basin and to improve the conservation of the basin headwaters, within a watershed management framework that benefits human populations and the ecosystems upon which they depend. It is widely accepted that an equitable balance between resource use and protection can be achieved by managing water as a resource in the framework of a river basin. Thus, interdependence was present at a high level because broader WASH access is contingent on having the proper environmental flows, etc. While the day to day activities were not interdependent, the overall idea was to look at the challenges faced in this basin from multiple angles and to develop solutions on several fronts.

Who drove integration?

- **The project funder**
- **The implementing organizations** (specifically, the USAID West Africa Mission that proposed the project)
- Other

The Water and Development Alliance is committed to developing and launching programs that address the needs of local communities and watersheds across the spectrum of water-related programming. This project was launched by USAID and The Coca-Cola Africa Foundation to take a well-rounded approach to water challenges in the Tano River Basin.

HOW

What were the key WASH components of the project?

- Improving Access to Clean Water
 - Conduct diagnostic assessment of community water systems.
 - Facilitate community water action plan.
 - Facilitate community-led construction of water supply infrastructure
- Promoting Hygiene and Access to Sanitation Services
 - Facilitating behavior change for school children in targeted areas.

- Constructing sanitation infrastructure

What were the key freshwater conservation components of the project?

- Strengthened government and civil society capacity for collaborative water resources management at local and river basin levels
 - Strengthened capacity of district assemblies (DAs) in Ghana, the sous-prefectures (SPs) of Sous in Ivory Coast and relevant CSO's in both countries by mainstreaming water and sanitation activities into their planning and budgeting processes.
 - Promote communications, information exchange and collaborative management in the Tano river basin through improved trans-boundary collaboration between Ghanaian and Ivory Coast water management institutions and communities.
- Improve watershed management in the Tano River Basin
 - Restoration of riparian zones: Restore river banks and promote sustainable land use systems at community level.
 - Bush fire control: Work together with communities, traditional institutions and local government to build capacity for improved bushfire management in the Tano River Basin.
 - To assess the feasibility of a "Payment for Watershed Services" (PWS) system in the Tano River watershed.

Which of these components was the priority? (i.e., which came "first"?)

Unknown.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

None had interdependent activities on the critical path – the WASH interventions did not directly influence the watershed management nor vice versa for this project specifically, though the broader interdependency is recognized by the local government and the implementers.

RESULTS and LESSONS

What objectives of the project were/have been met?

Objective 1: Improving Access to Clean Water

- Diagnostic assessment of water systems was conducted in all 10 project communities in Ghana and Cote d'Ivoire. The outcome of the assessment informed the type of water systems provided to each of the beneficiary communities.
- Community Water action plans developed and implemented for 8 communities
- 10 Water and Sanitation committees have been formed and trained to manage water facilities on behalf of communities.
- Operation & Maintenance accounts opened for 5 water systems by community members on the Ghana side. This
- forms part of the Water Facility Management Plans (FMPs) put together by communities. On the Cote d'Ivoire side, the
- WATSAN committees manage the fund.
- 5 new boreholes drilled and fitted with hand pumps. One of the boreholes fitted with a hand pump was provided in the Kongodian Primary School in Cote d'Ivoire.
- 1 borehole drilled and fitted with a mechanized system for pumping water into an overhead tank for distribution into the community
- 1 hand dug well fitted with hand pump
- 1 spoilt hand pump on a borehole in Kongodian was replaced

Objective 2: Promoting Hygiene and Access to Sanitation Services

- 98 teachers and 35 District/local stakeholders received training on hygiene promotion.

- Each basic school in beneficiary communities received 7 sets of Teaching and Learning Materials
- 2 schools provided their own hand washing facilities ahead of project delivery
- 15 schools in beneficiary communities received KVIP latrines fitted with hand washing facilities

Objective 3: Strengthened government and civil society capacity for collaborative water resources management at local and river basin levels

- Built capacity of WATSAN Committees to lead in the governance and management of the water systems
- Linked Water and Sanitation Department in District Assemblies with WATSAN Committees to ensure technical support for maintenance of infrastructures.
- Built capacities of Parent – Teacher Associations and School Management Committees to support management and maintenance of sanitation facilities in schools.
- The Assembly persons who are the link between the communities and the District Assemblies have been involved in the process to ensure support for maintenance is budgeted for by the District Assembly. It is as a result of this relationship that the Jomoro District Assembly offered to support the funding of the extension of electricity to the site.

Objective 4: Improve watershed management in the Tano River Basin

- Community-wide sensitization and capacity building activities held on sustainable land use practices, wildfire management, agroforestry, importance of water bodies, environmental sanitation, etc. About 3,544 people have benefited from these sessions.
- About 13,600 trees (Mahogany, Edinam, Emere and Kola) have been planted along the Tano River as part of the restoration of the riparian zone.
- Completed drafting of community watershed management plans for four (4) communities.

What objectives were/have been not met?

Objective 1: Improving Access to Clean Water

- 1 dry bore was drilled in Nsawora (Ghana). No alternative water system could be provided.
- In all seven (7) water systems out of the ten (10) proposed have been provided. Two(2) of the communities on the Ivorian side of the TBA already had adequate potable water systems so the team felt there was no need providing additional systems to these communities. In Kongodjan, the water system was constructed in the basic school because a broken down hand pump on a borehole in the community was replaced this giving the community 2 boreholes.
- The water from the Pantooso borehole has high iron levels. This is making the patronage level very low. An iron removal plant will be required to treat the water so as to improve on usage by the community.

Objective 3: Strengthened government and civil society capacity for collaborative water resources management at local and river basin levels

- The aspect of improved trans-boundary collaboration between the water management institutions in Ghana and Cote d'Ivoire could not be fulfilled within the time frame.

Objective 4: Improve watershed management in the Tano River Basin

- Development and implementation of watershed management plans will continue in the remaining 6 communities under the TBA Forest and Biodiversity Project working in the same communities.
- Systems for assessing PWS are yet to be developed in Ghana.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes. Indicators included:

- Number of people in target areas with access to improved drinking water supply as a result of program assistance
- Number of people in target areas with access to an improved sanitation facility as a result of program assistance
- Number of school children in target areas with access to an improved sanitation facility as a result of program assistance
- Liters of drinking water treated with program-supported methods for point-of-use application as a result of program assistance
- Percentage of compounds with absence of visible feces in program target communities as a result of program assistance
- Percentage of compounds in program target communities with a handwashing station as a result of program assistance
- Number of hectares under improved water resource, watershed, or basin resource management as a result of program assistance
- Number of watershed/basin stakeholder governance groups supported with program assistance
- Number of policies, laws, agreements, or regulations promoting sustainable water resources, watershed, or basin resource management and conservation that are implemented as a result of program assistance
- Percent of operations and maintenance costs for water supply and sanitation services covered through customer charges in program-assisted target areas
- Number of community water and sanitation committees established and trained with program assistance
- Number of policies, laws, agreements, regulations, or investment agreements promoting sustainable water supply and sanitation that are implemented as a result of program assistance
- Funds leveraged for program-supported projects
- Number of positive external media publications, awards, or public recognition involving the Alliances' activities

What were the main challenges of the project?

- Timeframe: This project originally had a time frame of 12 months – but ended up taking 20 months. We should therefore be more realistic with project time frames. As things got tense towards the end of the time frame, the focus on the “process and networking” aspect of the project and other activities had to be reduced to allow concentration on the completion of infrastructure provisions.

Based on the experience from this project, what are your recommendations for other integrated projects?

- Coordination: The monthly phone calls were very useful in keeping all project partners on the same page and to hear the latest on the status of the project. It is also a good strategy of holding service providers accountable to work-plans etc. It has been helpful in resolving issues – it enabled GETF for instance see the need for no cost extensions and similar issues in advance and prepare for it.

6. Improved water access and increased participation in integrated watershed management of a community in Nicaragua

Sources: Final Progress Report from WWF to The Coca-Cola Foundation and WWF Mesoamerican Reef staff

WHERE and WHO

Where is the project located (city, country, region)?

Citalapa community San Rafael del Sur county, Entre Rios Tamarindo and Rio Brito watershed, Managua, Nicaragua

What is the approximate funding amount?

\$100,000

Who are the partners (donors/funders and implementing organizations)?

Partner: The Coca-Cola Foundation (and Coca-Cola Company via Global Partnership on Freshwater)

Implementing Organization: WWF-Mesoamerican Reef

Local partner: One of the main local partners that collaborated was Fundación Nicaragüense para el Desarrollo Sostenible (FUNDENIC-SOS).

What is the timeframe of the project (months or years)?

1 year: January 1, 2013 - December 31, 2013

WHY

What were the objectives of the project?

- 1) addressing the problem of lack of access to drinking water in one community, which in turn will have a positive effect on the community's health, and
- 2) engaging the selected community (beneficiary) in reforestation activities to protect and conserve the water source, consequently strengthening the integrity of the watershed's ecosystems.

What criteria/conditions led the project to be selected?

3 main reasons:

The Entre Rios Tamarindo and Rio Brito watershed was selected as the starting point for this effort due to the presence of communities with limited access to drinking water that are located in zones with diverse stakeholders. These characteristics offered adequate conditions to lay a foundation for integrated watershed management and payment for environmental services schemes.

In the two counties that are most populated and cover the largest area of the watershed (San Rafael del Sur County and Land of Villa Carlos Fonseca County), most illnesses are related to limited access to drinking water and sanitation services.

Additionally, the presence of sugar mills in the zone represents an opportunity to engage them in the future management of the watershed and implementation of BONSUCRO, a voluntary standards for sugar sustainable sugar production. Vast extensions of land in both counties are used for sugarcane. Many of the inhabitants base their livelihoods on fishing and agriculture, specifically subsistence and in the sugarcane plantations.

Furthermore, this watershed presents opportunities to address deforestation and erosion from community and industry agriculture activities."

Erosion from unsustainable land use in the upper part of the watershed, especially in the south, generates sedimentation in the lower part of the watershed and in the coastal zone.

Specific for the WASH intervention, the community was chosen for these reasons:

Evaluation of the costs related to establishing the drinking water system were done preliminarily for communities that showed more interest, commitment and ownership. Based on this preliminary cost determination, Citalapa community was selected because it had a nonoperating drinking water system and the only public school in the community did not have water access. Also, community leaders expressed their interest, commitment and ownership to support project activities and work on the sustainability of the renewed and increased drinking water system.

Why did the project integrate WASH and freshwater conservation goals?

- **To test a new methodology**
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

"WWF's interest in the Entre Rios Tamarindo and Rio Brito watershed is based on our Freshwater program's objective of reducing pressure on freshwater sources through integrated watershed management or payment for environmental services, promoting the participation of the different stakeholders (users) in the watershed."

"This is part of a replication effort undertaken by the WWF Freshwater program, which is based on several successful activities related to integrated watershed management and payment for environmental services carried out in the Central American Region. The experience and replication builds on mechanisms, such as a Payment for Watershed Services (PWS) approach established in Guatemala (2001), and similar initial steps now undertaken in Honduras."

HOW

What were the key WASH components of the project?

- Supported restoration and establishment of a new portion of a drinking water system in Citalapa community
- Supported community members to self-organize to achieve the sustainability of improved and increased drinking water systems;

What were the key freshwater conservation components of the project?

- Selected one community (beneficiary) as a model community in water management and reforestation to protect and conserve the water source, Citalapa;
- Trained community members on water, environmental and biodiversity topics;
- Reforested and cleaned up specific areas in the Citalapa community with the participation of community members.

Which of these components was the priority? (i.e., which came "first"?)

Activities were prioritized equally.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The integrated watershed management would not be possible without the support of the community for implementation, and engagement of the community was enabled by the work to improve their water access. Thus, the conservation component was dependent on the water access component.

RESULTS and LESSONS

What objectives of the project were/have been met?

- Drinking water access: 900 persons, corresponding to 150 households, from the community of Citalapa, now have permanent access to drinking water.
- Reforestation: 1 hectare of the Citalapa community was reforested by members of the communities.
- Environment and biodiversity training: 145 persons of the community, including teachers and students, were trained on water, use of natural resources, environmental, pollution prevention and biodiversity

What objectives were/have been not met?

None

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes, metrics included:

1. Number of persons with improved water access in the selected community and number of liters/year of water provided by the drinking water system to the beneficiaries.
2. Number of hectares reforested in the Entre Rios Tamarindo and Rio Brito watershed.
3. Number of persons trained on water, environment and biodiversity topics.

What were the main challenges of the project?

There were no relevant problems or deviations during project implementation due to the interest and commitment of the community leaders.

Based on the experience from this project, what are your recommendations for other integrated projects?

Limited water access is always a key concern in the communities. Communities many times have not identified or related to the watershed as their water source, so linking water access activities with conservation of freshwater ecosystems opens the door to make the case and engage the communities in a holistic approach based on the watershed that will benefit them and also the freshwater ecosystems.

7. Improved water access and livelihoods, and increased participation in integrated watershed management in the Mesoamerican Reef (MAR) Catchments

Source: Final Progress Report from WWF to The Coca-Cola Foundation and WWF Mesoamerican Reef staff

WHERE and WHO

Where is the project located (city, country, region)?

Mesoamerican Reef Catchments - Manchagua sub watershed, San Pedro Sula, Honduras.

What is the approximate funding amount?

\$100,00

Who are the partners (donors/funders and implementing organizations)?

Funder: The Coca-Cola Foundation

Implementer: World Wildlife Fund (WWF)

Local partner: One of the main local partners that collaborated was Fundación Hondureña de Investigación Agrícola (FHIA)

What is the timeframe of the project (months or years)?

1 year and 3 months (January 1, 2014 – March, 30, 2015)

WHY

What were the objectives of the project?

- a) addressing the problem of lack of water access in one community, which in turn will have a positive effect on the community's health, and
- b) achieve the participation and commitment of the inhabitants of selected communities to establish agroforestry systems to increase/restore the forest cover in the sub-watershed, consequently strengthening the integrity of the watershed's ecosystem.

What criteria/conditions led the project to be selected?

The MAR ecoregion has the largest coral reef system in the Western Hemisphere, including the world's second largest barrier reef. This ecoregion encompasses both the marine areas and water catchments of the sovereign countries of Belize, Guatemala, Honduras and Mexico.

Rivers that drain the lands of 400 watersheds connect the mountain ranges and plains with the coast and Caribbean Sea. The principal threats, current and anticipated, affecting freshwater ecosystems and species are in the MAR catchments are:

- Effluent pollution, where agrochemical runoff of commercial agriculture/aquaculture is the main contributor
- Climate change, including an increase in extreme climate events such as droughts, hurricanes and floods;
- Habitat destruction, such as deforestation, forest degradation and other land conversion in critical watersheds;
- Poor soil management, related to both commercial and small-scale agriculture resulting in sedimentation of waterways; and
- Freshwater extraction from streams and aquifers, due to increased social and economic uses, both private and public.

Human activities drive all of these threats, with agriculture being the main driver in the MAR watersheds. Agriculture is a direct cause of habitat destruction, pollution, soil erosion and freshwater extraction. Over 30% of the MAR Catchments of Belize, Guatemala and Honduras are used for commercial and subsistence agriculture (WRI, 2006) and recent studies indicate that the conversion of natural ecosystems to commercial and subsistence agriculture is accelerating. MAR countries have established a large number of protected areas to limit land use change. However, much needs to be done to support or improve their management and protection.

Even though the majority of the population of the MAR Catchments live in big cities such as Guatemala City, San Pedro Sula, Belize City and Cancun, many people live in rural areas where drinking water and sanitation services are scarce or limited, negatively impacting the health and livelihoods of people in rural communities. At the same time, these rural communities depend on subsistence agriculture to support their livelihoods, which affects freshwater ecosystems through deforestation and inadequate agricultural practices.

Selection of this specific location:

In San Pedro Sula, the Manchaguala sub-watershed was prioritized among the Chamelecon subwatersheds for its higher presence of subsistence agriculture farming communities whose agriculture activities impact the watershed via soil erosion and illegal logging, and because there are several communities located in this sub-watershed that have limited or no access to water.

Specifically for the WASH intervention, the community was chosen for these reasons:

EI Naranjito. This community was selected because it had a non-operative and inefficient water distribution system. This system presented leaks, reached only a few households in the community

and worked only for a couple of hours a day, when it worked. Other factors for which EI Naranjito community was selected were: a) the community leaders and members expressed their commitment to work actively on the water access improvement activities, b) the community is conformed mainly by women and children, and c) community members committed to reforest the areas around the water access system, in order to conserve and protect the water source and create natural barriers for the system.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

Improve water access in a community located in Manchaguala sub watershed.

What were the key freshwater conservation components of the project?

1. Increase forest cover in degraded areas within the Manchaguala sub watershed through the reforestation of the areas around the water source and water access system.
2. Trained community members on water efficient use and integrated watershed management.
3. Strengthening technical capacities of smallholder farmers in the communities located in the Manchaguala sub watershed, specifically in better agricultural practices and integrated watershed management.

Which of these components was the priority? (i.e., which came "first"?)

Activities were prioritized equally.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The integrated watershed management would not be possible without the support of the community for implementation, and engagement of the community was enabled by the work to improve their water access. Thus, the conservation component was dependent on the water access component.

RESULTS and LESSONS**What objectives of the project were/have been met?**

All objectives were met:

- Improved water access in El Naranjito community.
 - One water distribution system was rehabilitated in El Naranjito community, providing permanent water access to the 80 households of the community during the whole day
- 2 hectares of the El Naranjito community were reforested by members of the communities, specifically around the water source and the water access system.
- Selected and achieved active participation of smallholder farmers of eight communities in the project activities related to the establishment of agroforestry system.
 - 70 hectares of agroforestry systems were established under better agricultural practices.
- Trained participating smallholder farmers on better agricultural practices and integrated watershed management.
 - 70 farmers trained on better agricultural practices and integrated watershed management
- Engaged seventy smallholder farmers of these communities in the integrated watershed management of the Manchaguala sub-watershed.

What objectives were/have been not met?

None.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes, metrics included:

- Number of persons with improved water access
- Number of hectares reforested in the watershed.

What were the main challenges of the project?

Implementation time restricted by weather: the activities of this project were planned to finalize in a timeframe of one year. However, the implementation of the project activities took longer than the proposed timeframe due to weather conditions in the Manchaguala sub watershed. First the rainy season started late, and when it finally started the access to the Manchaguala sub watershed was limited or closed because the intensity of the rain had caused landslide that blocked the roads or their conditions were too poor to allow the trucks to go up the watershed to deliver the plants and materials needed.

Based on the experience from this project, what are your recommendations for other integrated projects?

Limited water access is always a key concern in the communities. Communities many times have not identified or related to the watershed as their water source, so linking water access activities with conservation of freshwater ecosystems opens the door to make the case and engage the communities in a holistic approach based on the watershed that will benefit them and also the freshwater ecosystems.

8. Improved water access and increased participation in integrated watershed management in the community-based tourism sector of the Mesoamerican Reef (MAR) Catchments

Source: Final Progress Report from WWF to The Coca-Cola Foundation and WWF Mesoamerican Reef staff

WHERE and WHO

Where is the project located (city, country, region)?

Honduras/Guatemala, Mesoamerican Reef Catchments

What is the approximate funding amount?

\$100,000

Who are the partners (donors/funders and implementing organizations)?

Funder: The Coca-Cola Foundation

Implementer: World Wildlife Fund (WWF)

Local partners: Asociación Programas de Gestión Ambiental Local (ASOPROGAL) in Guatemala, and Fundación Cayos Cochinos and Asociación Pro Comunidades Turísticas de Honduras (LAPROCOTURH) in Honduras.

What is the timeframe of the project (months or years)?

1 year (January 1, 2015 - December 31, 2015)

WHY

What were the objectives of the project?

The goal of this project was to improve water access in two communities, dependent on tourism and located in the MAR Catchments; and increase the participation of the inhabitants of these communities in the integrated management of the watershed where their communities are located.

What criteria/conditions led the project to be selected?

The MAR ecoregion has the largest coral reef system in the Western Hemisphere, including the world's second largest barrier reef. This ecoregion encompasses both the marine areas and water catchments of the sovereign countries of Belize, Guatemala, Honduras and Mexico.

Rivers that drain the lands of 400 watersheds connect the mountain ranges and plains with the coast and Caribbean Sea. The principal threats, current and anticipated, affecting freshwater ecosystems and species in the MAR catchments are:

- Effluent pollution, where agrochemical runoff of commercial agriculture/aquaculture is the main contributor
- Climate change, including an increase in extreme climate events such as droughts, hurricanes and floods;
- Habitat destruction, such as deforestation, forest degradation and other land conversion in critical watersheds;
- Poor soil management, related to both commercial and small-scale agriculture resulting in sedimentation of waterways; and
- Freshwater extraction from streams and aquifers, due to increased social and economic uses, both private and public.

Human activities drive all of these threats, with agriculture being the main driver in the MAR watersheds. Agriculture is a direct cause of habitat destruction, pollution, soil erosion and freshwater extraction. Over 30% of the MAR Catchments of Belize, Guatemala and Honduras are used for commercial and subsistence agriculture (WRI, 2006) and recent studies indicate that the conversion of natural ecosystems to commercial and subsistence agriculture is accelerating. MAR countries have established a large number of protected areas to limit land use change. However, much needs to be done to support or improve their management and protection.

Even though the majority of the population of the MAR Catchments live in big cities such as Guatemala City, San Pedro Sula, Belize City and Cancun, many people live in rural areas where drinking water and sanitation services are scarce or limited, negatively impacting the health and livelihoods of people in rural communities. At the same time, these rural communities depend on subsistence agriculture to support their livelihoods, which affects freshwater ecosystems through deforestation and inadequate agricultural practices. At the same time, some of these rural communities depend on tourism to support their livelihoods. This community-based touristic offer has not been promoted widely in international markets due to the lack of conditions, including adequate sources of drinking water, among others. Additionally, this community-based touristic offer frequently is related to protected areas in the watershed, which represent an opportunity to link tourism to the conservation and protection of these areas and management of the watershed that are vital for the health of the freshwater ecosystem.

Specifically for the WASH intervention, the communities were chosen for these reasons:

The three participating communities (East End in Honduras, Cayo Quemado and Plan Grande Quehueche in Guatemala) were selected by evaluating their limitations to access drinking water and other criteria as:

- Commitment and ownership of the community members to maintain the water system.
- Expression of interest and commitment to participate in the watershed integrated management activities.
- Available area to build the rainwater collection systems.
- Tourism related community activities related to protected areas.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

- Improving water access, and in turn the health conditions and touristic services, in the selected communities through the construction and rehabilitation of water distribution systems.

What were the key freshwater conservation components of the project?

- Preserving the environmental conditions of the freshwater ecosystem through conservation activities to protect the water sources.
- Strengthening technical capacities of community members in integrated watershed management, efficient water use, water and sanitation, as well as on reforestation practices in the watersheds of the MAR.

Which of these components was the priority? (i.e., which came "first"?)

Activities were prioritized equally.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The integrated watershed management would not be possible without the support of the community for implementation, and engagement of the community was enabled by the work to improve their water access. Thus, the conservation component was dependent on the water access component.

RESULTS and LESSONS**What objectives of the project were/have been met?**

- Rehabilitated/constructed three rainwater collection systems, contributing to improve the health conditions in the communities, as well as their livelihoods.
 - The project activities improved water access for a total 365 persons in the three participating communities:
 - 70 from East End community in Honduras.
 - 73 from Cayo Quemado community and 132 students that attend the public school of this community and come from nearby communities.
 - 90 from Plan Grande Quehueche community.
- 3 hectares of the communities of East End, Cayo Quemado and Plan Grande Quehueche, located in the MAR watersheds, were reforested by members of the communities.
- Increased water related education for more than 349 persons through training and awareness raising on integrated watershed management, water and sanitation, reforestation activities, efficient water use, among others.
 - Five trainings were carried out on integrated watershed management, efficient water use, water and sanitation, water conflicts resolutions, and rainwater collection systems management and maintenance. 149 persons of Cayo Quemado, Plan Grande Quehueche and East End communities participated in these trainings.
 - Additionally, 200 persons from nearby communities participated in the awareness raising activities related to water and reforestation.
- Engaged more than 200 members of the participating communities in reforestation activities in the MAR catchments.

What objectives were/have been not met?

None

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes, metrics included:

- Number of persons with water access improved.
- Number of persons with increased water related education/awareness.

What were the main challenges of the project?

The selection process of the communities took more time than planned due to cost and feasibility analysis.

Based on the experience from this project, what are your recommendations for other integrated projects?

Limited water access is always a key concern in the communities. Communities many times have not identified or related to the watershed as their water source, so linking water access activities with conservation of freshwater ecosystems opens the door to make the case and engage the communities in a holistic approach based on the watershed that will benefit them and also the freshwater ecosystems.

9. Improving School-Based Hygiene and Sanitation in Quirimbas National Park, Mozambique

Sources:

- “Improving School-based Hygiene and Sanitation in Quirimbas National Park, Mozambique: Final Project Report.” Pemba, January 30, 2016. Report developed in collaboration with AMA (Associação do meio ambiente) and WWF-Pemba
- E-mail responses from WWF staff

WHERE and WHO

Where is the project located (city, country, region)?

Quirimbas National Park, Mozambique (three districts of Cabo Delgado Province – Macomia, Ibo and Quissanga)

What is the approximate funding amount?

Funding was about \$1M over 3.5 years

Who are the partners (donors/funders and implementing organizations)?

Funder: Johnson & Johnson

Implementers: WWF-Mozambique (Pemba, Cabo Delgado program office); AMA (Associação de Meio de Ambiente de Cabo Delgado) (key field implementing partner)

Local partners: local and district governments

What is the timeframe of the project (months or years)?

3.5 years (March 2012 - December 2015) – There was 1 extension of 6 months (July to December 2015) to finalize the project since they had major flooding in the spring of 2014 which set back project implementation by several months.

WHY

What were the objectives of the project?

Improve the health and living conditions of people living in the coastal zones of Quirimbas National Park, through implementation of water, hygiene and sanitation infrastructure in schools and households, educational activities for behavior change.

- Objective 1: Make sustainable physical improvements in schools for hand-washing and sanitation
- Objective 2: Improve youth understanding and adherence to hygiene and sanitation practices
- Objective 3: Link schools to local communities to diffuse adoption of new practices
- Objective 4: Strengthen community management of coastal & marine resources to sustain human & eco-system health

What criteria/conditions led the project to be selected?

J&J's strategic geographical areas had shifted out of DRC (where we had about \$1M over 3 years to spend on a PHE project) and they were looking for another region to support that was more in line with their vision. Mozambique was the country that came to mind since we saw a need for a WASH-type project in QNP and because we already had a network and a good relationship with the local partner in that region. The amount of funding was going to be greater than the support they were already giving to Cameroon, and because their focus had shifted out of Central Africa, Mozambique was chosen as the new site for this project.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)

To respond to a need, where high levels of water-related diseases were recorded in communities in the park, along the coast line, an obvious lack of sanitation facilities and hygiene practices, unsustainable marine resources harvesting and pollution (human waste, open defecation on beaches) on the coast needed to be addressed.

Who drove integration?

- **The project funder**
- **The implementing organizations**
- Other

WWF-US and WWF-Mozambique since Quirimbas NP was already being supported by WWF-Moz in the park to help with conservation, law enforcement, capacity building of the government partner, etc.; due to the good relationship with the local partner and the government, it was easier to integrate WASH to an already well functioning support system and project with the park authorities and the communities. WWF-Moz had been working in other parts of the country with AMA (The implementing organization) so they were the perfect fit for this project in QNP.

HOW

What were the key WASH components of the project?

Objective 1: Make sustainable physical improvements in schools for hand-washing and sanitation

- 1.1 Build/repair school latrines
- 1.2 Repair Wells that supply water to schools
- 1.3 Train water committees to manage and maintain wells
- 1.4 26 schools provided with buckets for hand-washing stations

Objective 2: Improve youth understanding and adherence to hygiene and sanitation practices

- 2.1 Revise local curriculum module to add hygiene and sanitation content; print and distribute to schools.
- 2.2 Support Ministry of Education to train teachers in content of new curriculum
- 2.3 Introduce and reinforce hand-washing practices in schools
- 2.4 Train and support School Councils to maintain latrines, tippy-taps, and water sources.
- 2.5 Form school clubs to involve students in environment, hygiene & sanitation activities.

Objective 3: Link schools to local communities to diffuse adoption of new practices

- 3.1 Mobilize villages and student clubs to eliminate open defecation practices, using the proven methodology "Community-Led Total Sanitation" (CLTS).
- 3.2 Promote and assist households to build latrines
- 3.3 Introduce hygiene & sanitation content to regular meetings of CCPs (Community Fishing Councils)

What were the key freshwater conservation components of the project?

Objective 2: Improve youth understanding and adherence to hygiene and sanitation practices

- 2.5 Form school clubs to involve students in environment, hygiene & sanitation activities.

Objective 4: Strengthen community management of coastal & marine resources to sustain human & eco-system health

- 4.1 Train CCPs to support "defecation-free" coastal areas.
- 4.2 Solidify alliances between community groups and CCPs to implement new marine-resource management practices and maintain hygienic beaches
 - Note: this included a participatory threat assessment to support definition of co-management plans within CCPs
- 4.3 Organize gender-balanced credit and savings groups PCR to support education, health expenses, and household hygiene (in 2014, a community session on management of marine resource found that a lack of jobs and alternative income to fishing justified pressure on marine resources)

Did one of these components come "first"?

The project primarily focused on improving sanitation and hygiene practices

Which of these components were considered interdependent (i.e., one could not happen without the other)?

- The ecosystem health and CLTS approach (Community-Led Total Sanitation): the improved management and health of the coastal areas would not be possible without the WASH activities. CLTS involves community leaders and authorities to see open defecation as an undesirable practice that negatively affects the health, wellbeing and environment of their community.
- School curriculum: a very important component of the project was the integration of concepts of water, hygiene, sanitation, health and environmental stewardship into the local school curriculum. A Memorandum of Understanding (MoU) was signed early on in the project, with the Institute of Primary Teachers Training (IFPP) to have 35 teachers get involved in the development process of the new curriculum module in collaboration with the Ministry of Education. The goal of this activity was to ensure the local curriculum in the schools taught the linkages between hygiene and sanitation, human and environmental health.

RESULTS and LESSONS

What objectives of the project were/have been met?

Highlighted project successes:

- Increase in the number of volunteers (students) to be part of the school environment clubs in the last year of project. The students kept the school latrines for the most part clean and well used. In some school clubs most notably the Ibo district, it was noted that at least 70% of school club members have latrines in their homes and the situation in Macomia district also demonstrated positively with about 60% students with latrines (this data came from a monitoring of roughly 4 schools/district).
- In terms of impact, the initiative of experience exchange among CCP groups was very positive and motivating for most participants.
- The integration of the concepts of hygiene, sanitation and environmental stewardship into the local school curriculum in the project area has been a great achievement and a good step toward sustainability of information dissemination for generations to come on these concepts.
- Legal recognition of the 5 CCPs was a great accomplishment in the project, to give the members of these committees some power over enforcing sustainable fishing rules and clean beaches actions in their respective legal fishing areas.

Detailed accomplishments:

Objective 1: Make sustainable physical improvements in schools for hand-washing and sanitation

- 13 school-based latrines (22 latrines built/repared; 9 destroyed by flood rains, spring 2014).
- 16 wells that supply water to schools repaired
- 16 water committees trained on technology and maintenance of wells (192 people)
- 26 schools with access to handwashing (bucket and/or tippy-tap station)

Objective 2: Improve youth understanding and adherence to hygiene and sanitation practices

- 50 Teachers at 26 schools trained to teach H&S and environmental stewardship
- 26 schools equipped with training and communications materials for classroom use.
- 26 schools using the health education training materials and practice handwashing.
- 20 School Councils (400 council members) trained and supported to maintain latrines and hand-washing facilities
- 26 school-based health and environment clubs formed and active.

Objective 3: Link schools to local communities to diffuse adoption of new practices

- 12 villages implement CLTS and eliminate open defecation practices (over 70% households with latrines)
- 566 latrines built (in some villages, most household latrines were destroyed in spring 2014)
- 15 CCPs introduced to hygiene and sanitation content during their regular meetings and involved in CLTS

Objective 4: Strengthen community management of coastal & marine resources to sustain human & eco-system health

- 15 CCPs support defecation-free beaches
- 15 CCPs implement resource management practices
- 50 PCR's created and functional

What objectives were/have been not met?

- Not as many schools reached for sanitation, hygiene and environmental training (targeted 33, total reached 26)
- Many latrines destroyed by the heaviest rainy season in decades in Cabo Delgado and Pemba in the spring of 2014 and 2015, which resulted in severe flooding and damage to roads and infrastructure in the project area and lead to an outbreak of malaria.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes, metrics for both WASH and environmental activities outlined in the specific objectives (above).

What were the main challenges of the project?

- Many teachers responsible for the environmental clubs do not support the activities of the clubs fully. They claim that it is a project activity and they want to follow guidance of the Ministry of Education only within their Strategic Plan (Plan Curriculum Teaching basic-PCEB).
- Of the 24 Health and Environmental Clubs trained in three districts, 33% clubs are at the desired operating level, the rest are reporting activities but with less enthusiasm and results, which is often attributed to the lack of engagement by their teachers, relating to the point above.
- CCPs are mostly still struggling with many internal problems to their own organizational structure, there are no follow-up records of business plans, and they conduct meetings

sporadically when there are conflicts, instead of meeting more regularly to address and discuss issues and solutions to their problems.

- An overall feeling of regret results from the emergency situation that occurred with the heavy flood rains over the course of the project. This situation led to the destruction of economic and social infrastructures, with a direct impact on people's lives mainly in the project's supervisory area. The implementation of the project was delayed and it affected significantly the hygiene and sanitation efforts of the project with the destruction of school and family latrines (also households in general and government infrastructures) on a large scale, which also led to a lack of access to the project area to conduct activities in several communities for many months, with the main emphasis on the districts of Macomia and Ibo.

Based on the experience from this project, what are your recommendations for other integrated projects?

- Making sure from the beginning of the project that all stakeholders understand the principles of integration of the project; clearly lay out the linkages between the sectors being integrated and develop clear integrated messages to tackle all sectors involved in the project
- Bring all stakeholders together from different sectors regularly to address concerns and provide training and refresher training to those who work on the integration aspects of the project to ensure good understanding of the concepts
- Spend a good amount of time at the onset of the project to think about the sustainability aspects of the project and to develop an exit strategy
- Work with people who are experienced in M&E to develop the M&E plan for the project to ensure that the impacts related to the integrated nature of the project are well captured.

10. Kenya Arid Lands Disaster Risk Reduction – Water, Sanitation and Hygiene (WASH) Program (KALDRR-WASH)

Sources:

- “Kenya Arid Lands Disaster Risk Reduction (KALDRR-WASH) program; Towards a better balance between water demand and supply: The Local Water Resource and Service Management approach applied to the pilot area Kalemngorok-Katilu in Turkana.” Final version - September 2013. Authors: Acacia Water, IRC, Aqua for All.
- USAID Kenya Arid Lands Disaster Risk Reduction – Water, Sanitation, and Hygiene Program Fact Sheet
- Interviews with Millennium Water Alliance staff

WHERE and WHO

Where is the project located (city, country, region)?

Northeast Kenya: Garissa, Isiolo, Marsabit, Turkana, and Wajir districts (all considered Arid and Semi-Arid Lands (ASAL) areas)

What is the approximate funding amount?

\$9.83 million – \$8 million in grant funds from USAID and OFDA and approximately \$1.85 million in match funding from MWA and its partners

Who are the partners (donors/funders and implementing organizations)?

The Millennium Water Alliance (MWA), with project partners Aqua for All, IRC – The Netherlands, Acacia Water and Akvo, through four MWA member NGOs: CARE, Catholic Relief Services, Food for the Hungry, and World Vision

Key Local Partners: Ministry of Environment and Water Resources, Ministry of Health

What is the timeframe of the project (months or years)?

Two years (December 2012 – December 2014)

WHY

What were the objectives of the project?

- Increase water storage capacity in arid lands
- Improve WASH conditions at health facilities and nutrition centers frequently used during emergencies
- Improve access and use of safe drinking water, point of use water treatment, good hygiene behaviors and sanitation facilities as a means of reducing diarrheal diseases in areas with recurrent emergency levels of malnutrition and around areas of improved storage

What criteria/conditions led the project to be selected?

- Motivated by the effect of the drought of 2011: The activity was part of a larger effort to assist the Kenyan government and local communities to increase their resilience to droughts and flooding caused by a changing climate
- In this region of Kenya: water access levels below 50%, more than 80% of the population does open defecation

About this geographic area overall:

In ASAL (Arid and Semi-Arid Land) areas in Kenya there are a number of challenges for water supply and governance. This leads to an increasing need for an integrated approach to assess the demand on the one hand, and the sustainable use of the water sources on the other hand.

Water is only shortly abundant and not made fully available for use: "the target area suffers from multi-year droughts and occasional flash floods. Due to the water shortages and the resulting loss of grazing lands complete communities can lose their livelihood. An important factor in this problem is the fact that the current water infrastructure and management do not provide for sufficient buffering of water to bridge the dry periods."

Poor water management: "the organisations responsible for direct management and provision of the water services and the water resources are weak... The WMCs, WUA, and WMCs hardly receive any support from the government structures... people seem to accept that their water points are poorly managed by a WUA which they have elected themselves, or that they have to walk a long distance to a neighbouring borehole because no initiative is taken to solve internal political problem which stops the repairing of the community borehole."

Water users and service levels: "Years of external aid have surely disturbed the fragile balance and coping mechanisms which were put in place by communities in the past, are not used anymore. There seems to be little belief that they are themselves the key to any solution in the area."

Expected changes in future demand: "expected changes for future water demand encompasses two components: the growth of population, which comes with a growth of livestock, but also a development of activities which requires water, such as farming in the area outside the Turkwel river."

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

Specifically, MWA in collaboration with the Dutch partners.

HOW

What were the key WASH components of the project?

- Improving the WASH conditions in health centers (which were used as nutrition centers amidst malnutrition and drought)
- Increasing access to drinking water and quality point-of-use treatment
- Promoting access to comprehensive WASH, good sanitation and hygiene behaviors at the community level

Key strategies:

- Build water supply using low-cost, resilient technology
- Train community water committees on the life-cycle cost approach and connect them with banks and government to enhance long-term system management
- Promote Household Water Treatment and Safe Storage techniques (HWTSS)
- Apply Community-Led Total Sanitation (CLTS)
- Collaborate with USAID's APHIA plus program to improve WASH in health facilities and nutrition centers
- Stimulate the local market for WASH materials and the emergence of private sector suppliers
- Utilize multiple avenues for hygiene promotion including radio and participatory education theater

What were the key freshwater conservation components of the project?

- Increasing the water storage for use during drought (because during the rainy season they have a lot of rain that could be stored)

Key strategies:

- Prioritize those communities most vulnerable to flood and drought within the five target counties
- IRC and Acacia Water will work with implementing partners to pilot the “3-R” – Retention, Recharge, and Reuse – strategy to increase water storage for use in dry times together with the “MUS” or Multiple Use Water Services approach to water supply
 - Water resource management work conducted as part of this project:
 - An in-depth evaluation of usages of water for a pilot area in each of the four counties throughout 2013 (this assessment is described in the [Towards a better balance between water supply and water demand](#) reports, which were written with Acacia Water). These reports also contain the hydrogeological assessment and buffering opportunities in the pilot area.
 - Developed a [Water Master Plan for each of the pilot areas](#).

Which of these components was the priority? (i.e., which came "first"?)

The disaster risk reduction was the primary objective of the program. The main purpose was to build the resilience of the community (against the effects of drought and flood).

Which of these components were considered interdependent (i.e., one could not happen without the other)?

- The water storage during drought and rainy season: once the capacity of the community is increased to have greater water access, it is necessary to understand their future uses of the water
 - Work with the community to understand their main water sources during the rainy season and also the dry season (e.g., the target communities are predominantly pastoralist communities, so it is necessary to provide water for livestock as well as humans)
 - Providing water to households: need to understand what they do with their wastewater (do they have a garden, etc.) and understand how they handle waste products in their compound
- For all of the water schemes developed as part of the program, they had to protect the area around water schemes so that the area is protected and not contaminated (with a fence, trees, etc.)

RESULTS and LESSONS

What objectives of the project were/have been met?

- 141 new and rehabilitated water schemes
 - New water schemes: 119 (borehole, spring scheme, earth pond, sand dam, rainwater harvesting tanks)
 - Rehabilitated water schemes: 22
- Improved latrine construction: 67
- They reached 174,000 people (more than the original goal of 160,000 people)
- Acacia Water's work on groundwater mapping was a key achievement for the program:
 - Groundwater mapping was carried out to understand water extraction and sustainability of groundwater sources
 - Through this work they were able to determine for a sample area viable locations for water points and determine the best suited, high yield water points that would be sustainable for a long time
 - The partnership with Acacia Water continues for the Kenya RAPID program to understand how they can take this to scale and target a larger area for underground water mapping

What objectives were/have been not met?

- Under-achievement related to CLTS: goal was open-defecation free status to 45 villages, and by the end of the program only 13 villages were declared ODS
 - The communities in general were not interested in this

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

There were a total of 21 indicators grouped under the 3 strategic objectives, including:

- Water access:
 - Water storage capacity (a percentage increase from the baseline)
 - Water schemes (new and rehabilitated, functioning monitored 3 months after construction)
 - Number of water committees collecting user fees to maintain water points
- Sanitation and Hygiene:
 - Number of health facilities and nutrition centers with access to latrines, and with soap and water at the handwashing stations
 - Latrines constructed
 - Households with access to improved latrines
 - Households with latrines functioning according to sphere standards
 - % of households disposing of solids waste properly
 - Water use and storage
 - People practicing correct water usage and storage (e.g. water storage has a lid, is dispensable, etc.)
 - Number of drinking water sources that are disinfected with point-of-use filters

What were the main challenges of the project?

- Sanitation and hygiene behavior change
 - Working with the communities on open defecation, etc. was very challenging
 - The program was only 2 years, and this requires being on the ground for a much longer period (3+ years for the impact to be properly felt)
 - By and large the results were achieved, so now the question is whether the community will continue the sanitation and hygiene practices

- MWA has another grant to implement in the same counties but they are not targeting exactly the same beneficiaries as last time
- Vulnerability of some of the water storage techniques
 - The tanks they provided are very dependent on rain: if the tanks do not fill with water then the water storage techniques will not support the community during drought
- Political strife
 - Inter-clan fighting in the area stopped program implementation for a time (cars and staff were not permitted to go through)
 - Some of the communities left entirely because of war, and it might take them 3-5 months to relocate back to where they were

Based on the experience from this project, what are your recommendations for other integrated projects?

- Scaling the project to a national level:
 - For this project they focused on small pilot areas; instead of focusing on small pilot areas they should do a wider area for implementation
 - The master plan of this project should be integrated into the future national government water sector plans
- Full understanding of water sector demand:
 - It is crucial to identify the different sectors using water to fully understand the water demand for the area
 - If people are focused on using water for irrigation they do not thinking about other areas
- Exit strategy and community level sustainability:
 - Program staff need to focus on working with the community to sustain the WASH interventions after the program is gone
- Alignment with each municipal government involved in the project:
 - Administration of duties within the Kenyan government is now devolved to the counties (e.g., the Garissa county government is now the one that administers most of the services related to water and sanitation)
 - It is necessary to align with each county government because each one is developing their own plan for water, sanitation, etc.
 - Each partner implementing in each county needs to bring the county fully on-board with the project plan to avoid resistance from the county

PUBLICLY AVAILABLE PROJECT INFORMATION

- <https://www.usaid.gov/kenya/fact-sheets/kenya-arid-lands-disaster-risk-reduction-%E2%80%93-water-sanitation-and-hygiene>
- <http://www.ircwash.org/resources/towards-better-balance-between-water-demand-and-supply>
- <http://www.ircwash.org/resources/water-master-plans-4-pilot-areas-turkana-wajir-moyale-and-marsabit-counties>
- <http://www.dutchwatersector.com/solutions/projects/351-kenya-arid-lands-disaster-risk-reduction-wash-program.html>
- http://www.waterservicesthatlast.org/countries/kenya_arid_lands_project/kenya_arid_lands_disaster_risk_reduction_wash_program

11. Mali WASH Alliance

Sources:

- Interview with Wetlands International staff. Note this project summary is from the perspective of Wetlands International, who was a subcontractor on the project. As a result, the details related to the WASH interventions are at a high level.
- “Accelerating WASH in Mali: Country Programme 2016 – 2020.” WASH Alliance Mali. <http://www.washalliance.nl/wp-content/blogs.dir/2/files/sites/2/2015/08/Country-2-pager-Mali.pdf>

WHERE and WHO

Where is the project located (city, country, region)?

Mopti, Koulikoro, Sikasso in Mali

What is the approximate funding amount?

Approximately 100,000 Euro for each year (5 years total)

Who are the partners (donors/funders and implementing organizations)?

Funder: Dutch Ministry of Foreign Affairs

Implementers: RAIN Foundation, Wetlands International, WaterAid

Local NGO Implementing Partners: Alphalog, AED (l'Association pour l'Entraide et le Développement), CAEB (Conseils et Appui pour l'Education a la Base), GRAT (Groupe de Recherches et d'Applications Techniques), GPEHA (Groupe pivot/eau, hygiène et assainissement), Helvetas, NEF (Near East Foundation), ARAFD (Association Recherche Action Femme et Développement)

What is the timeframe of the project (months or years)?

2011-2015 (5 years total)

WHY

What were the objectives of the project?

- Provide clean water and improved sanitation access, and improve hygiene behavior
- Reduce the cost of those services
 - Background: the system to get clean water in these parts of Mali was very expensive for the poor

What criteria/conditions led the project to be selected?

- Locations were selected because of the experience of the local NGOs
 - Wetlands International have 18 years' experience in Mopti areas, and the other local NGOs had extensive experience in their regions
- Rural areas were selected because the current level of WASH need was high in those areas due to a very long dry season (when the wells dry out)

Background on the country and the area:

Mali is one of the poorest countries in the world. Without access to safe water, communities are unable to take their first essential step out of poverty. It is estimated that around two third of the people in Mali don't have sufficient or steadily functioning water facilities and more than one third does not have access to safe drinking water source. When it comes to sanitation, less than half of the population has access to a toilet. Hygiene practices are poor and diarrhea is the third

most common cause of death. The situation has deteriorated since the political crisis in 2012. Mali is not on track to reach the MDG target for sanitation. Around 240,000 people live in these three regions (Koulikoro, Sikasso and Mopti).

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Most of the practitioners in the WASH sector working on this project understand that the ecological aspect of the intervention is very important, and so they asked for the advice of Wetlands International

Who drove integration?

- **The project funder**
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

In Mopti:

- There were many sanitation problems there, so they worked with the women's organizations in the village and trained them on the importance of the latrine for the family, etc.
- Provided microcredit to be able to afford the latrines

In Koulikoro:

- Constructed a micro-dam to collect water

In all locations:

- WASH advocacy and policy work
 - Policy: Developing an enabling public sector for WASH, in which the government creates a supportive policy and regulatory environment for sustainable WASH services and allocates sufficient budget for WASH.
 - Advocacy: Empowering, informing and organizing citizens for sustainable WASH. These citizens will demand and pay for sustainable WASH services, practice healthy behavior and hold the government accountable for delivering quality WASH services.

What were the key freshwater conservation components of the project?

In Koulikoro:

- Helped the community understand the impact of the micro-dam on the whole watershed in the area so that the villages could help protect the new ecosystem and also get the most benefit from the new infrastructure (i.e., upstream and downstream impacts, agriculture possibilities with the newly available surface water, new vegetation and animals in the area)
- Implemented a study to explain the groundwater levels would change after the presence of the dam
- Formed community associations for the upstream and downstream inhabitants who would be affected by the dam (to prevent conflict between these two groups)

In Sikasso:

- Worked on the soil conservation (a key problem was erosion due to water coming from the mountainous area)
- The amount of crop they were harvesting was suffering because of the erosion)

Which of these components was the priority? (i.e., which came "first"?)

Accomplishing the WASH objectives was the priority focus of the project

Which of these components were considered interdependent (i.e., one could not happen without the other)?

Proper implementation of the micro-dam needed the support of the water resource management/conservation work to be successfully implemented and managed by the community.

RESULTS and LESSONS

What objectives of the project were met?

As a result of our work in Mali between 2011 and 2015, 36,000 people use improved sanitation facilities and 5,800 use improved water resources. We were able to deliver these results through strategically combining sanitation and hygiene promotion and sensitization campaigns, Integrated Water Resources Management, training on environmental sustainability, the provision of WASH credits strengthening the water sector through training and capacity building, private sector development and policy influencing. During the last years, Mali WASH Alliance increasingly targeted women through training them on the Right to Water and Sanitation (RTWS) and including them in WASH committees. At the same time, people were trained on using waste to improve their economic situation. In a period of 5 years we have reduced the costs per person to get access to WASH from €251 to €95.⁶⁹

In Mopti:

- 80% of the families used latrines
- The level of disease is going down in the community

In Koulikoro:

- Helped the community understand "life after the dam" and the impact of the dam upstream and downstream (vegetation, animals, opportunities to use the water for agriculture, etc.)
- Groundwater assessment of the area
- Upstream and downstream community associations

What objectives were/have been not met?

They did not have time to complete a baseline study of the ecology in the area

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes.

What were the main challenges of the project?

- Visible environmental outcomes: it is difficult to see the outcome of the environmental components of the projects (whereas with WASH it is more visible and more immediate); sometimes people wanted them to point out a visible effect of their intervention and they had to explain to people that they would need to be patient and that the impact was less visible)

⁶⁹ *ibid*

- Geographies: working in three different places with different projects at the same time

Based on the experience from this project, what are your recommendations for other integrated projects?

- WASH interventions require ecological intervention: all WASH interventions must incorporate an ecological component if you want to make an impact in the area
- Local networks support implementation: the network established through these types of projects is very valuable. Now they know the technical services in the area that are in charge of water issues for the government, the mayor, the school department, etc.
 - With those contacts it's very easy to implement your work and communicate your message in the area
- Local knowledge: the residents of the area have local knowledge (even if they don't have the scientific explanation of what is happening in the area) and it is always better to discuss the issue with them to have an inclusive decision
 - e.g., they had many discussions with the micro-dam's upstream and downstream communities based on their local knowledge

PUBLICLY AVAILABLE PROJECT INFORMATION

- Current Mali WASH Alliance web page: <http://www.washalliance.nl/country-alliances/mali/>
- 2-pager about the 2011-2015 project and the ongoing 2016-2020 project: <http://www.washalliance.nl/wp-content/blogs.dir/2/files/sites/2/2015/08/Country-2-pager-Mali.pdf>
- Infographic on all WASH Alliance projects 2011 - 2015: <http://www.rainfoundation.org/wp-content/uploads/2016/05/Infographic-Results-Impact-2011-2015.pdf>
- Akvo RSR site for all WASH Alliance projects: <http://washalliance.akvoapp.org/en/projects/>

12. Mi Cuenca – Integrated Basin Management in Central America

Sources:

- Interview with CARE Guatemala staff
- “Mi Cuenca Project: Lessons Learned and Challenges.” Guatemala, March 2013 (<http://www.slideshare.net/gwpcam/experiencia-del-proyecto-mi-cuenca>)
- “Basin Management in Guatemala.” IUCN. (<http://www.iucn.org/regions/mesoamerica-and-caribbean/basin-management-guatemala>).

WHERE and WHO

Where is the project located (city, country, region)?

Guatemala (in six microbasins from the municipalities of Tacaná, San José Ojetenam, Sibinal, Tajumulco and Ixchiguán, belonging to the Departamento de San Marcos), Honduras, Nicaragua, El Salvador

(Note: this project summary is focused exclusively on the project's work in Guatemala)

What is the approximate funding amount?

Who are the partners (donors/funders and implementing organizations)?

Funder: Howard G. Buffet Foundation (HGBF)

Implementers: a consortium between Catholic Relief Services (CRS), CARE and the International Union for the Conservation of Nature (IUCN) and 15 local organizations (across all four countries)

What is the timeframe of the project (months or years)?

2007 - 2013 (7 years)

WHY

What were the objectives of the project?

1. Improve the ability of rural communities to face water-related impacts (droughts, floods, landslides and conflicts)
2. Improve the access, service and use of water for consumption, domestic and productive purposes
3. Make sure the legal frameworks, public policies, customary laws and investments contribute to the comprehensive management of the water resource and recover the environment to favor families

What criteria/conditions led the project to be selected?

Specific to the Guatemala project locations:

- The western highlands of Guatemala have the highest poverty indices in the country
- Each consortium organization also had projects being implemented in this area of Guatemala, which made them able to operate much more quickly (CARE Guatemala had already implemented the Mi Bosque project there)

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

The organizations approached the foundations with a request to operate as an integrated project. Each organization implemented work related to all objectives of the project, in addition to some specialty:

- UICN focused more specifically on territorial planning and management
- CARE worked specifically with the municipal government because of their experience working with them on education, hygiene, health, and sanitation

Overall, the project was based on the conceptual framework of Integrated Water Resource Management (IWRM)

HOW

What were the key WASH components of the project?

- Building local capacity to build and maintain water supply infrastructure
- Promoting hygiene and sanitation in communities, particularly focused on children and women

What were the key freshwater conservation components of the project?

- Protecting and improving water sources
- Strengthening local governance for water resources

Did one of these components come "first"?

No, project objectives were considered equally.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

All.

RESULTS and LESSONS

What objectives of the project were/have been met?

Accomplishments specific to Guatemala:

- 2,711 families from 33 communities from five municipalities improved their access to water services for human consumption and greywater management.
- Improvements in the health infrastructure and access to water and school sanitation services through the improvement of health infrastructure.
- 219 families improved agricultural production by constructing five water systems.
- In the natural resources area (forests and soils), six microbasin diagnostics and management plans were updated and six microbasin councils were strengthened.
- Likewise, the water recharge zones of those six microbasins were identified by a technical study; 55 community forest nurseries were established and 700.52 hectares were managed through reforestation, soil conservation works and structures and the establishment of agroforestry systems located in zones of water recharge.
- In addition, 38 local risk reduction coordinators –COLRED- were created and strengthened; they have risk diagnostics and community plans, which allowed them to implement 15 mitigation works and the reforestation of vulnerable zones.

- In the same way, the validation of microbasin management plans has been supported using the tools CRiSTAL (Community-Based Risk Screening Tool Adaptation and Livelihoods) and Foto-mapeo (photomapping).
- The project strengthened coordination with the Municipal Offices for Women, Children and Adolescents (OMM), to establish municipal policies and plans that favor gender equality and promote full and equal participation of men and women in all decision-making levels, as a way to advance in the construction and exercise of a democratic citizenship.
- Additionally, the technical and strategic planning capabilities of the municipal governments and the Municipal Planning Directorate were strengthened, which enabled the population to participate in the Development Municipal Council (COMUDE) to achieve co-management in GIRH management in the microbasins and municipalities of Ixchiguán and Tajumulco. Cooperation agreements were established with five municipal governments in order to fortify institutionality.
- As a result of the incidence action of five municipalities where the project intervened, the technical capabilities of the personnel of the Planning Municipal Directorates and Municipal Forestry Offices were strengthened and strategic alliances were established with organizations and projects, among them: RASGUA, Water and Sanitation Network of San Marcos (RASMARQ), Coordinator of Natural Resources and the Environment of the Department of San Marcos (CORNASAM), Association for the Integral Development of the Municipalities of the Highlands of San Marcos (ADIMAM), Caritas and Helvetas.

What objectives were/have been not met?

Unknown.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes (see above).

What were the main challenges of the project?

- Project expense: the focus on recharge zones, management of water sources, etc. required more technical expertise and human resources, which increased the cost of the project
- Project size: the territory within the project's scope was very large (across 6 microbasins)
- Governance sustainability: strengthening the Water Administration, Operation, and Maintenance (AOM) Commissions to maintain the water systems
- Fees: establishing just tariffs that are sufficient to cover the cost of operation, maintenance, and payment for environmental services
- National policy: constructing an integrated intervention model for water and sanitation at a national level; the central government has resources for water management but their approach is very sectorial: water component, sanitation component, etc.
- Gender: increasing the participation of women in decision-making

Based on the experience from this project, what are your recommendations for other integrated projects?

- Working in consortium: CRS, CARE, and UICN maintained their commitment to do the work jointly. They committed to jointly develop the global strategy and the thematic areas, taking into account the strengths and weaknesses of each institution and based on this strategy they developed the work for the six distinct microbasins. In the microbasins more geographic and population coverage, financial leverage, and credibility at the community, municipal, and national level was achieved.

- Municipal support: in order to achieve sustainability of the Water Administration, Operation, and Maintenance (AOM) Commissions, it is important to have a municipal-level institution to help regulate and accompany them. This also promotes the responsibility of the local government to manage natural resources within their territories.
- Risk reduction: sustainability is about reducing many types of risk (endogenous and exogenous): political, administrative, legal, financial, technical, environmental, cultural, and social
- Education has the greatest impact for sanitation and hygiene behavior change: the habit and attitude around sanitation has a greater impact than the infrastructure. The SARAR method and the PHAST (Participatory Hygiene and Sanitation Transformation) approach were key to implementation of hygiene and sanitation behavior change.
- Conflict resolution: the approach to resolving water use-related conflicts should be constructed based on the values and cultural mechanisms existing in the communities
- Water committee transparency: the lack of transparency in the management of resources by the water committees generates distrust in the users which does not permit the committee to collect adequate revenue through water tariffs

PUBLICLY AVAILABLE INFORMATION

- Powerpoint on project challenges and lessons learned: <http://www.slideshare.net/gwpcam/experiencia-del-proyecto-mi-cuenca>
- IUCN summary information of the project: <http://www.iucn.org/regions/mesoamerica-and-caribbean/basin-management-guatemala>
- Video with footage of the project sites: <https://www.youtube.com/watch?v=kUa2ePhNCrM>
- Blog about a visit to the Mi Cuenca project: http://waterinternational.org/?page_id=274

13. Mount Mulanje Community Watershed Partnership Program

Sources:

- WADA (Water & Development Alliance) Malawi Close-Out Report, Mount Mulanje Community Watershed Partnership Program, Presented to Global Environment & Technology Foundation By Development Alternatives Incorporated, February 2, 2009
- “Mulanje Mountain Community Watershed Partnership Project Implementation Plan” Submitted To USAID/Malawi And The Coca-Cola Africa Foundation (With Southern Bottlers, Ltd.) Under The USAID/Coca-Cola/GETF Global Development Alliance Community-Watersheds Partnership Program (CWPP) Small Grants Program. Submitted By: Development Alternatives, Inc. (prime contractor for COMPASS II)

WHERE and WHO

Where is the project located (city, country, region)?

Malawi: Rural communities in Traditional Authority Laston Njema, Mulanje District, and south-east Malawi

What is the approximate funding amount?

- a. USAID Office of Global Development Alliances (GDA) (\$1,390)
- b. USAID Africa Bureau (\$100,000)
- c. The Coca-Cola Foundation Atlanta (\$160,444)

Who are the partners (donors/funders and implementing organizations)?

- d. WADA Representation: Southern Bottlers (local Coca-Cola bottler), USAID/Malawi
- e. Implementing Partners: Development Alternative Inc., Eastern Produce Malawi Ltd. (Limbuli Tea Estate), Lujeri Tea Estate, Mulanje Mountain Conservation Trust (MMCT), Mulanje Peak Food
- f. External Partners: Ministry of Agriculture, Department of Water Development, Department of Forestry

What is the timeframe of the project (months or years)?

January 1st 2007 to July 31st 2008 (work suspended between January 2008 and April 24th 2008).

WHY

What were the objectives of the project?

The Mt. Mulanje CWPP seeks to build toward long-term sustainable and equitable water supplies for all users of water originating on Mulanje Mountain through the achievement of three specific objectives. The specific objectives of the Mt. Mulanje CWPP were to:

1. Increase supply of potable water for household and irrigation use by approximately 2,650 households through rehabilitation of a gravity-fed water system and construction of three new spring boxes;
2. Improve governance of water resources through institutional strengthening and formation of 27 water user groups, water valuation and pricing, and broader understanding of water conservation issues by communities in the Mulanje Mountain area; and
3. Protect and rehabilitate Mulanje watersheds through reforestation of two upper watersheds, better management of sloping agricultural lands, and increased public participation in watershed conservation efforts.

What criteria/conditions led the project to be selected?

Existing work:

The Mt. Mulanje CWPP project fits very naturally into the ongoing activities and interests of both of the organizations who first applied for this grant: USAID/Malawi and The Coca-Cola Africa Foundation (with Southern Bottlers, Ltd). In addition, the active engagement of a variety of local and national stakeholders builds capacity in these institutions to continue the work after the CWPP project.

The Mt. Mulanje CWPP project will be implemented by Development Alternatives, Inc. and its partners under the COMPASS II activity of USAID/Malawi. This will reduce the need for establishing separate operational infrastructure, since COMPASS II is an ongoing activity that has already established field presence in 15 districts throughout Malawi, including Mulanje District. This implementation strategy was proposed by USAID/Malawi to the USAID/TCCC/GETF Global Development Alliance upon award of the grant to USAID/Malawi and Southern Bottlers, Ltd. (on behalf of The Coca-Cola Africa Foundation) in February 2006, and approved by the GDA members in March.

The Mt. Mulanje Community-Watershed Partnerships Project (CWPP) has been able to leverage more than \$550,000 in additional resources from various partners in the project. These include USAID/Malawi, through its ongoing COMPASS II activity being implemented by DAI; The Coca-Cola Africa Foundation, through local franchisee Southern Bottlers, Ltd.; at least five nongovernmental organizations, local and national government departments, the US Peace Corps, and the private sector. In addition, we have identified more than \$7 million worth of complementary and parallel activities that are presently being undertaken in the Mulanje area and that share the broad goals and objectives of the Mt. Mulanje CWPP.

Importance of Mount Mulanje:

Mulanje Mountain—often called Malawi’s “Island in the Sky”—is in the southeastern corner of Malawi, bordering Mozambique. Mulanje is economically important nationally and considered to be of global environmental significance for its rich biodiversity. Currently, negotiations are underway to have the mountain declared a World Heritage Site. In addition, Mulanje Mountain is considered as a model Global Biosphere Reserve in Southern Africa.

The altitude of the Mulanje Mountain massif, combined with its position intercepting moist southeast winds, gives the mountain a very high annual rainfall, in excess of 4 m in places, which in turn produces abundant water resources that are of the utmost importance to surrounding populations and businesses, notably extensive tea estates that provided 8.7% of Malawi’s agricultural exports between 1998 and 2000.

These water resources are now threatened. Encroachment into both natural and plantation forest areas, uncontrolled burning, and illegal logging, together with unsuitable smallholder farming practices on the steep lower slopes of the mountain outside the Forest Reserve, produce two major effects. The first is a reduction in the stability of water flow in rivers and from springs; previously perennial water courses now flood during wet periods and dry out during the dry season. Secondly, erosion of the slopes results in high silt loads in the streams leading to siltation of gravity-fed water supplies and damage to irrigation systems while also lowering agricultural productivity through loss of topsoil and its fertility.

Selection of the site:

In order to achieve the objectives within the time and resources available, the Mt. Mulanje CWPP project will operate in Traditional Authority Laston Njema, on the southeastern side of

Mulanje Mountain. This area was selected based on demonstrated local commitment, the high potential for the watershed to yield tangible direct benefits to the surrounding communities, and the biodiversity importance of a mid-elevation rain forest that is the largest intact forest of its kind in Malawi.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

The program was designed to build toward long-term sustainable and equitable water supplies for all users of water originating on Mulanje Mountain by increasing the supply of potable water for household and irrigation use, improving governance of water resources, and protecting and rehabilitating Mulanje watersheds through reforestation, better agricultural land management, and increased public participation. It is widely accepted that an equitable balance between resource use and protection can be achieved by managing water as a resource in the framework of a watershed. Thus, interdependence was present at a high level because broader WASH access is contingent on proper use and protection of the watershed. While the day to day activities were not interdependent, the overall idea was to look at the challenges faced in this watershed from multiple angles and to develop solutions on several fronts.

Who drove integration?

- **The project funder**
- **The implementing organizations** (specifically, the USAID mission who proposed the project)
- Other

The Water and Development Alliance is committed to developing and launching programs that address the needs of local communities and watersheds across the spectrum of water-related programming. This project was launched by USAID and The Coca-Cola Africa Foundation to take a well-rounded approach to water challenges in Malawi.

HOW

What were the key WASH components of the project?

Objective 1: Increased Supply of Potable Water

- a. Rehabilitation completed of gravity-fed system on Pwera River, serving 1,750 households in TA Njema.
- b. Construction completed of 3 new piped water systems serving about 900 households in TA Njema.

Objective 2: Improved governance of water users groups

- a. At least 27 village water users' groups are registered and have officers, constitutions and bylaws, and have negotiated and signed agreements over water governance.

What were the key freshwater conservation components of the project?

Objective 3: Watershed Protection and Rehabilitation

- a. Management plan for project area completed and agreed by all stakeholders.

- b. Forest reserve co-management agreements signed between communities and Department of Forestry.
- c. Forest management agreements signed for customary lands by communities and Department of Forestry.
- d. Drip irrigation kits sold to 150 farmers.
- e. 500,000 rain forest tree seedlings produced in 50 nurseries and transplanted in Chisongoli Forest area.
- f. Smallholder farmers plant agroforestry and fruit trees and practice soil conservation on 60 Hectares.
- g. Smallholder farmers establish tea plantations and practice soil conservation on 45 Hectares.

Which of these components was the priority? (i.e., which came "first"?)

Unknown.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

None had interdependent activities on the critical path – the WASH interventions did not directly influence the watershed management nor vice versa for this project specifically, though the broader interdependency is recognized by the local government and the implementers.

RESULTS and LESSONS

What objectives of the project were/have been met?

Objective 1: Increased Supply of Potable Water

- a. Pwera scheme completed serving 17 villages with a total of over 6,000 households of which it is expected that at least 4,000 will benefit directly from the new water supply. In addition, Maliera clinic which serves at least 5,000 people in the area was supplied with piped and therefore running water, whereas previously it had relied on a hand pump.
- b. Three spring boxes, one with piped reticulation, serving some 600 households completed. This figure, two-thirds of the original estimate, is considered a more reasonable estimate of number of households that will benefit. The original figure was an approximation of the total number of households but in these extensive villages with very steep slopes, it is likely that families remote from the spring boxes will continue to use unimproved water sources.

Objective 2: Improved governance of water users groups

- a. 27 village water users' groups trained in water governance and have elected committees.
- b. Local drama groups were used very successfully to perform in strategically sited villages, emphasizing through drama, comedy, song and dance, the need to conserve the forest for both the water resources and other resources it provides.
- c. The valuation study of goods and services from Mount Mulanje was completed and the results have been influential in accelerating actions to halt the degradation of the mountains resources.
- d. The study on attitudes of local people towards water payments and their willingness to make such payments was conducted. The results showed a general understanding of the need to pay for water and a willingness to pay enough to cover estimated costs for repair and maintenance.

Objective 3: Watershed Protection and Rehabilitation

- a. MMCT has completed a final draft of the Mount Mulanje management plan that requires only endorsement from the Department of Forestry.
- b. Preparatory work for forest co-management in the Chisongoli Forest has been completed with the formation of forest user groups with elected committees, implementation of forest resource assessment and completion of a study into the socio-economics of forest resource access and use.
- c. The Socio-economic study on Resource Use and Access was completed. It showed that virtually all households in the area rely on resources from the mountain for their livelihoods.
- d. 59 drip irrigation kits have been procured, 50 of which will be distributed as demonstrations by Mulanje Peak Foods (MPF) to farmers within vegetable irrigation clubs who already sell their produce to MPF. Nine kits will be distributed by MMCT to schools under a school feeding and nutrition program, based on organic farming, run by the Permaculture Network, a local NGO.
- e. 60,000 rainforest species were planted in cleared areas during the 2007 wet season.
- f. Over 2,000 fruit tree seedlings (mango, citrus, apple, avocado, papaya) were procured and distributed to 70 farmers, who have planted on 5 Ha. of steep land around the base of the mountain;
- g. Some 200,000 subsidized, colonial seedlings were distributed to over 2,000 farmers.
- h. The Ministry of Agriculture has an on-going program of soil and water conservation extension, supported in this area by MMCT. Conservation farming, use of organic fertilizers, agroforestry and contour farming are the key technologies being promoted.

What objectives were/have been not met?

Objective 1: Increased Supply of Potable Water

- a. The cost of rehabilitation of the Pwera scheme escalated due to some incorrect initial assumptions that required many components of the scheme to be replaced rather than rehabilitated. This led to budget realignment, approved by WADA on 17th April, 2008, that reduced available budgets for other components of the project. Of the three spring box schemes, one has piped reticulation serving some 300 households, while the other two are protected springs serving villages with a total population of some 300 households.
- b. The Hydrological Study was removed with steering committee agreement. It was agreed that, based on local experience, perennial flow could be guaranteed at all sites, except in exceptional drought years.

Objective 2: Improved governance of water users groups

- a. MMCT has requested Mulanje Mountain to be classified as a Water Catchment Area under the new Water Policy of the Malawi Government. Once approved, all communities around the mountain will form water user groups that will aggregate into catchment water users' associations, overall under the oversight of a Water Catchment Management Board. Formation of the Laston Njema Water Users' Association will be facilitated by MMCT under this new initiative.

Objective 3: Watershed Protection and Rehabilitation

- a. The Malawi Department of Forestry under a new policy requires that co-management of forest reserves is based on a strategic management plan for the whole reserve, upon which local "block" management plans – which form the basis for co-management – are based. MMCT has the advancement of co-management in the Mulanje Forest Reserve as one of its priority objectives and has an ongoing program for the establishment of co-management.

- b. An almost 100% increase in the cost of drip irrigation kits since the original project submission (US\$ 65 to US\$ 120) meant that the planned 150 kits could not be bought within the budget. We purchased 59 kits, each capable of irrigating 200 square meters, giving a total irrigated area of 1.18 Ha. against the original planned area of 1.5 Ha. The kits are being distributed by Mulanje Peak Food, initially to selected farmers as demonstrations, since the technology and its advantages are as yet little known by local farmers. Without demonstrations to highlight their advantages, farmers will be unwilling to accept the kits on credit.
- c. Early in the project, all partners agreed that raising and planting out rainforest seedlings to rehabilitate encroached or logged areas within the reserve would not yield long-term results. A better approach is to protect such areas from burning especially and to allow natural regeneration. Some 60,000 seedlings available in the area were planted along exposed river banks during the 2006/2007 wet season of which more than 55,000 were surviving at the beginning of the dry season.
- d. The number of fruit tree seedlings purchased was constrained by reduced budget. Nevertheless, the program was successful and was incorporated into MMCT's ongoing livelihoods program with smallholder farmers. It was agreed that each beneficiary farmer should receive 30 seedlings to be able to establish a decent sized orchard, even though this limits the number of beneficiary farmers. With 30 trees, a farmer will produce enough fruit to eat and as well as to sell. Mulanje Peak Foods is desperate for locally produced fruit to satisfy the production capacity of their plant.
- e. The number of subsidized teas seedlings bought by farmers was considerably lower than projected in the original project proposal. Two factors influenced uptake. First, farmers had expected they might get the seedlings either free or on credit rather than having to pay cash up-front. Second, the time for purchase coincided with the period when cash is least available, a few months prior to harvest. Both Lujeri and Limbuli Estates have an active and ongoing program of smallholder tea development and this activity within WADA Malawi has enabled some poorer farmers who could not afford to buy unsubsidized seedlings join.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes, indicators included:

- a. Number of people in target areas with access to improved drinking water supply as a result of program assistance
- b. Number of people in target areas with access to an improved sanitation facility as a result of program assistance
- c. Number of school children in target areas with access to an improved sanitation facility as a result of program assistance
- d. Liters of drinking water treated with program-supported methods for point-of-use application as a result of program assistance
- e. Percentage of compounds with absence of visible feces in program target communities as a result of program assistance
- f. Percentage of compounds in program target communities with a handwashing station as a result of program assistance
- g. Number of hectares under improved water resource, watershed, or basin resource management as a result of program assistance
- h. Number of watershed/basin stakeholder governance groups supported with program assistance

- i. Number of policies, laws, agreements, or regulations promoting sustainable water resources, watershed, or basin resource management and conservation that are implemented as a result of program assistance
- j. Percent of operations and maintenance costs for water supply and sanitation services covered through customer charges in program-assisted target areas
- k. Number of community water and sanitation committees established and trained with program assistance
- l. Number of policies, laws, agreements, regulations, or investment agreements promoting sustainable water supply and sanitation that are implemented as a result of program assistance
- m. Funds leveraged for program-supported projects
- n. Number of positive external media publications, awards, or public recognition involving the Alliances' activities

What were the main challenges of the project?

See below.

Based on the experience from this project, what are your recommendations for other integrated projects?

Overall Lessons Learned:

- a. Communication: Of primary importance, there needs to be much improved communication between all the major actors. Southern Bottlers, the local Coca-Cola bottler, apparently received little information about the project from either the Coca-Cola Company or the Coca-Cola Foundation in southern Africa. As a result, their involvement with and contribution to the project was less than could have been wished.
- b. Project Complexity: While the various components of this project were complementary and were all relevant to the overall objective of watershed conservation and improved water supply, their number and diversity complicated implementation of the project and was at least part of the reason that not all targets were achieved. All the partners involved in implementation of the project already had full programs of their own under implementation and were unable to provide all the resources needed for effective implementation of so many different activities. Organizing personnel, preparing and managing contracts, arranging procurement of materials and managing finances was very time-consuming and fell largely to DAI staff, who are fully involved with implementation of COMPASS II.
- c. Timeframe: Some of the activities, for example establishing forest reserve co-management on the mountain, could not feasibly be completed in one year, given the complexity of the process and the need to establish consensus and reach agreements with multiple stakeholders. As another example, farmers in the area are unfamiliar with drip irrigation, and it is not obvious that the benefits that might accrue from drip irrigation in other areas – water conservation and labor saving – are relevant to this area. The introduction of drip irrigation needed an initial trial and demonstration period during one dry season, followed by setting up a program of distribution to farmers that requested the kits and a revolving fund under suitable management to ensure sustainability. Again, such a program would require at least two years to implement.
- d. Simplicity and narrower scope recommended: A simpler project with two or three activities only, related say water supply and some aspects of forest conservation only, all of them achievable within the one-year period, would have permitted better focus and achieved better results. Such a project could be consciously designed with activities needing a longer-term commitment in mind, local partners agreeing at the outset to take on the continuation, expansion and diversification of activities in the post-project period

14. One Health Initiative

Sources:

- CI Project fact sheet: “Improved Freshwater Conservation and WASH Integration in the Mzimvubu Catchment”
- E-mail responses and interviews with Conservation International staff

WHERE and WHO

Where is the project located (city, country, region)?

The headwaters of the Umzimvubu Catchment in South Africa's Eastern Cape

What is the approximate funding amount?

\$748,092

Who are the partners (donors/funders and implementing organizations)?

Funders: US Agency for International Development Bureau for Africa, through the Africa Biodiversity Collaborative Group, The Starwood Hotels & Resorts Worldwide Foundation, Inc., and The South African Department of Environmental Affairs

Implementer: Conservation South Africa, local affiliate of Conservation International

Local partner: Alfred Nzo District Municipality (ANDM) - district government which covers >70% of the watershed, the Umzimvubu Catchment Partnership Program (UCPP), Matatiele Local Municipality, Traditional leaders and community members in Ward 14 and Ward 21

What is the timeframe of the project (months or years)?

3 years

WHY

What were the objectives of the project?

The “One Health” initiative’s objective is to integrate water, sanitation, and hygiene (WASH) activities with livestock improvement and conservation programs to improve the health of people, animals and ecosystems. Conservation South Africa (CSA) is applying this framework in the upper reaches of the Umzimvubu Catchment to improve water resources sustainability and resilience to threats, including climate change.

CSA amplifies its lessons in the Umzimvubu through the Healthy Catchment Alliance (HCA), a European Union-funded initiative currently focused on three river catchments: the Keiskamma/Buffalo, the Mzimvubu, and the Mzimkulu catchments with a potential to expand to the Orange River (OR) catchment. In total, the replication of CSA’s work in the Umzimvubu has the potential to affect >3.5 million through lessons sharing and exchange visits

CSA’s global affiliate, Conservation International, spearheads an effort, funded by USAID, with members of the Africa Biodiversity Collaborative Group (ABCG) to advance the knowledge and experience for integrated programming of freshwater conservation and WASH in sub-Saharan Africa. Through ABCG, CI has committed to sharing the “One Health” model and lessons from this project with other Africa conservation and development partners for replication..

- Support restoration and freshwater conservation through land management and livelihood improvements.

- Secure the health of the ecosystem by empowering local communities to manage and benefit from their natural resources and supporting local governance structures that enable sustainable livelihoods and secure water futures for all water users
- Generate enhanced water security (base flow regulation and water quality), poverty alleviation, and environmental quality benefits in two high-water yield, high poverty, high degradation risk sites in the catchment
- Document the tangible local and regional water benefits and the process for their delivery to provide an invaluable national and continental model
- Inform policy and practice within the Alfred Nzo District and transfer lessons to three other major water catchment areas through the Healthy Catchment Alliance (a European-Union funded initiative focused on the Keiskamma/Buffalo, Mzimvubu, and Mzimkulu catchments, with potential to expand to the Orange River catchment) - <https://www.facebook.com/healthycatchmentalliance/>

What criteria/conditions led the project to be selected?

In South Africa, the legacy of apartheid has left most former communal homelands in a state of desperate poverty and environmental degradation. Policies guarantee communities basic access to water at <200 m from households, and basic sanitation, most rural municipalities have between 50-85% unserved. Mzimvubu Catchment is within one of these former homeland areas. Over 2,000,000 hectares of the watershed is inhabited by approximately 1,000,000 people.

Though its communities are poor its biodiversity is rich - supporting >2000 plant and animal species that are unique to the Maputaland-Pondoland-Albany Hotspot. This is also the last free-flowing river system in South Africa and provides a range of ecosystem services, food, water, and livelihoods. The watershed is experiencing rapid rates of degradation in the form of huge soil erosion gullies from overgrazing, sediment load damage to infrastructure, seasonal water supply extremes, loss of grazing lands and increased erosion from the spread of non-palatable and water-thirsty invasive vegetation.

As the headwaters of a river system that provides water to one million rural people, protecting the upper catchment is crucial to attaining South Africa's development goals. Sadly, the entire upper catchment (435,000 ha) is a severely degraded grassland mosaic landscape, with high water runoff that causes extensive soil erosion and unpredictable water supply. Degradation, largely from *Acacia mearnsii* (black wattle) and *Acacia dealbata* (silver wattle) encroachment and erosion are impacting nearly 10% of the upper catchment⁷⁰. At the same time, about 40% of the region's wetlands have been drained or diverted for commercial farming interests or are otherwise impacted by agricultural activities. A vulnerability assessment shows that further expansion of alien trees and extreme weather events could exacerbate degradation.⁷¹ In order to protect water security for over a million people, the landscape requires improved management and conservation efforts that work holistically with the health and economic needs of the population.

Why did the project integrate WASH and freshwater conservation goals?

⁷⁰ Nel, G et al. 2013. Creating resilient farming landscapes in the northern Umzimvubu Catchment. Baseline report.

⁷¹ Holness, S. 2014. [Adapting to climate change in the Alfred Nzo District: Protecting Ecological Systems and Infrastructure that Enable Adaptation to Climate Change.](#)

- **To test a new methodology**
- To align with SDG 6
- **The project was interdependent** (i.e., the WASH component needed the conservation component to be successful, or vice versa)
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

Education and awareness raising about good hygiene and sanitation practices, skills development around WASH infrastructure and livestock management for reduction of disease risk, and water quality and quantity monitoring via citizen science

What were the key freshwater conservation components of the project?

Protection and restoration of natural springs, ecological restoration of grasslands, implementation of rotational grazing practices with livestock herders and removal of water-thirsty of alien invasive trees

Did one of these components come "first"?

The restoration and conservation of the headwaters of the Mzimvubu catchment is the primary motivator behind CSA's involvement in the project.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The overarching framework of the project is the "One Health" framework for Africa, is focused on delivering improvement in the health of ecosystems, the health of livestock, and the health of people, recognizing the interdependence of all of these.

While the initiative was built a solid foundation of ecological restoration, securing water resources, and livelihood benefits, in order to achieve our goals, integrating of WASH was essential to fully meet the health needs of the people in the area. Disease, particularly water-borne diseases that cause diarrhea and present significant risks to youth and elderly from water contaminated by livestock are rampant. The socio-economic impact of this reality is that children miss school; the elderly are not able to get to clinics and, while sick, are unable to care for the children in the household. The overall effect that the project aims to address is this poverty trap.

RESULTS and LESSONS

What are the specific target objectives of the project?

The project aims to impact >3.5 million through lessons sharing and exchange visits.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

A comprehensive Performance Monitoring Plan (PMP) was designed for the project, drawing heavily from the Africa Biodiversity Collaborative Group's Freshwater Conservation-WASH Monitoring and Evaluation Framework. The framework includes WASH and conservation

metrics, as well as additional indicators that are intended to show the “value added” of an integrated approach through metrics related to gender, governance, capacity building and youth.

What are the main challenges of the project?

- **Building community livestock herds:** Although traditionally villages would have historically grazed together, in some communities this tradition has been lost and herds have been managed and grazed separately by individual households. Working with the traditional leadership, CSA has found some communities more receptive than others to re-establishing a single herd grazing system which is more manageable and better for the environment.
- **Maintaining high level political support:** Individuals working in government are often rotated, which forces the project to re-build political champions to fill the place of those who have left.
- **Delivering at scale:** South Africa is a politically active society. When one village is perceived to be getting a benefit while others aren't, tensions can emerge. Communities want jobs, water, and sanitation and traditional leaders across the Mzimvubu Upper Catchment regularly approach CSA for support. Until additional resources can be identified, CSA is focused on two priority sites to demonstrate this framework, which will benefit the poorest and most vulnerable communities in the area.

Based on the experience from this project, what are potential recommendations for other integrated projects?

Although still at the early stages of the project, working with local government to deliver water services has allowed for partnerships and potential future resource flows for sustainability of the restoration efforts as well as replication of a multi-pronged approach for clean water delivery.

PUBLICLY AVAILABLE INFORMATION

The Umzimvubu Catchment Partnership Programme (UCPP)
website: <https://umzimvubu.org/about/>

15. Rio Ayampe Water Fund

Source:

- Informe de consultoría del Fondo de Agua de la Cuenca del Ayampe, Marcos Fioravanti, Monserrate Vélez, Juan Pablo Argüello. Contracted by The Nature Conservancy. Guayaquil, Ecuador. January 2014.
- Interview with The Nature Conservancy staff

WHERE and WHO

Where is the project located (city, country, region)?

Rio Ayampe, Ecuador

What is the approximate funding amount?

Unknown.

Who are the partners (donors/funders and implementing organizations)?

Organization	Role
Provincial Government of Manabí and Santa Elena	Constituent member
Municipality of Puerto López, Santa Elena, Jipijapa and Paján	Constituent member
International Center for the Research of the Wonder of the Child (Centro Internacional para la Investigación del Fenómeno de El Niño)	Constituent member
Public Municipal Enterprise of Portable Water and Sewage (Empresa Pública Municipal de Agua Potable y alcantarillado EPMAPAPL)	Constituent member
TNC	Constituent member
Parochial assemblies (Puerto Lopez, Machalilla, Salango, Pedro Pablo Gómez, Cascol)	Constituent member
Tourism sector (the most important hotels and restaurants)	Constituent member
Pol hielito	Constituent member
Pesquera Polar	Constituent member
National Secretariat of Water (SENAGUA)	Technical and research support
Ministry of Environment (Ministerio del Ambiente)	Technical and research support
Ministry of Tourism (Ministerio de Turismo (ATP))	Technical and research support
Fundación Jocotoco	Technical and research support
Universidad del Sur de Manabí	Technical and research support
Students of the watershed influence area	Technical and research support
Machalilla National Park	Technical and research support
Communities and precincts	Contributor/Donor
Tanker Association	Contributor/Donor

Proyecto Costas y Bosques	Contributor/Donor
General population of the watershed influence area	Contributor/Donor
Tourists	Contributor/Donor
Property owners	Contributor/Donor

What is the timeframe of the project (months or years)?

- The water fund was established in 2014, but currently is not functioning
- After elections, the new authorities still want to engage in conserving the watershed but are not supportive of the water fund specifically as a mechanism to organize work around this issue in the Rio Ayampe

WHY

What were the objectives of the project?

Establish a water fund as a long-term financial mechanism to ensure the quality and quantity of water, the conservation and recuperation of the ecosystem, the sustainable development of the local communities, and applied monitoring and investigation.

What criteria/conditions led the project to be selected?

Significance of the Rio Ayampe:

The Rio Ayampe basin is recognized globally as one of the richest areas of biological and cultural diversity, with high levels of endemism. The basin is also the principal source of water for the consumption of the population and the development of Puerto Lopez.

Issues identified:

- There are specific threats that jeopardize the basin's quality and quantity of water:
 - Unsustainable farming practices: agrochemicals and allowing livestock directly in the river
 - Over-extraction from the river
 - Direct use of the river for washing clothes and cars
 - Lack of sanitation infrastructure in the nearby communities
- Several public and private actors have attempted to mitigate these threats. However, these initiatives have not been part of an integrated conservation and restoration effort that engages all of the basin's stakeholders, do not have consistent funding, and therefore have had limited impact.

Identifying specific project locations:

- The Rio Ayampe is very large, so the communities were selected based on the water quality analysis of the watershed
 - Found specific points of interest because of the high levels of contamination
- Specific place: Guale (150 people)
 - One of the most contaminated places with coliforms (knew it was because of livestock and human waste from the people in this community)
 - Located downstream, but is the town closest to the point where the municipality extracts the water for the city
 - Worked with the municipality of Puerto Lopez because all of their water comes from the Rio Ayampe watershed

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
 - To align with SDG 6
 - **The project was interdependent (i.e., the WASH component needed the conservation component to be successful, or vice versa)**
 - Other
- They worked on integrating the sanitation component from the beginning because they knew from the analysis that there was an issue with the cows and the people contributing to contamination of the river
 - The government participated in the work with the community and all of the steps of the process
 - TNC led the technical component

Who drove integration?

- The project funder
 - **The implementing organizations**
 - Other
- Worked with the Puerto Lopez municipality and the provincial government
 - Contract other people locally to implement the projects in the field
 - Maintained a direct relationship with the community throughout the whole process

HOW

What were the key WASH components of the project?

- Laundry and sanitation solution
 - Eco-toilets
 - Do not use or contaminate potable water
 - Do not require plumbing or electricity
 - Transform human waste into plant fertilizer
 - Capture and use rainwater
 - Recycle gray water and urine to water an integrated orchard
 - Laundry washing location
- Administered by In Terris Foundation: organization interested in sustainable ag and rural development with an emphasis on sanitation
 - They worked with them to identify where to put the toilets, how to construct them, etc.
 - Also helped with awareness in the community and working with the actors
 - They are focused on the sanitation solution, but they were also very willing and interested in working on watershed conservation - they were very interested in these other aspects of the fund
 - For example, they also helped them design and put in place a survey with the tourism companies to understand if they are willing to pay to protect the watershed
 - They helped them to work with the community to understand the importance of the forest, etc.
 - They also helped them work on a cattle issue: residents put the cattle inside the river to drink (resulting in more contamination with the humans and the cattle)
 - Helped them design a system where the community would graze their cattle to put them there and have water there so they don't have to go to the river

What were the key freshwater conservation components of the project?

- Creation and management of conservation areas
- Control and surveillance through community forest rangers
- Ecological restoration
- Enclosure
- Development of sustainable ranching
- Development of sustainable agriculture
- Reduction of river pollution

Which of these components was the priority? (i.e., which came "first"?)

- Freshwater conservation remained the main priority of the water fund

Which of these components were considered interdependent (i.e., one could not happen without the other)?

- The overall conservation of the watershed and maintenance of high water quality was dependent on working with the community of Gaule on sanitation, because there was a key issue with this community contaminating the water close to the taking point

RESULTS and LESSONS

What objectives of the project were/have been met?

- The sanitation solution has been successful: infrastructure is there for approx. 12 families that did not have any prior sanitation solution
 - They have monitored the sanitation infrastructure - more than 70% of the sanitation systems are being used
 - 2 not being used because people moved away
 - Every 4-6 month they do visits and evaluate the situation in the community
 - The solution is working with the community even though the water fund is not in place

What objectives were/have been not met?

- The active implementation of the water fund: the community is still working toward broader watershed conservation, but they are not coordinated or focused specifically on water quantity and quality
- What they are trying to do now is work with the municipalities on local ordinances to enforce conservation, since the structure of the water fund is not in place
 - Not a traditional WF scheme that would be seen in other places

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

- Yes
- Most impact-based metric is the water quality and quantity
- Also try to measure the implementation of the activities (e.g., how many people are using the infrastructure and other solutions that they promote)

What were the main challenges of the project?

- Municipal government change 1.5 years ago
 - Future: could be a possibility to implement the fund in the future, but it's far out to begin soliciting funding
- Difficult to make the local actors participate - worked hard to have good attendance to their meetings
 - Often they had to meet twice for the same topic

Based on the experience from this project, what are your recommendations for other integrated projects?

- Key importance: evaluate the real need to implement this kind of sanitation project (such as the eco-toilets)
 - a. Needs must be clearly related to the objective of the fund
 - The water funds are not here to replace the work the municipality or the water company is here to do
 - There are places where the objectives of the funds are related directly to WASH initiatives, so that is a good place to implement them
 - e.g. here they were able to identify specific source of contamination
 - b. If the need is identified, then working with the community is crucial
 - Must have the contribution, the initiative of the community
 - c. Also key to work with the local authorities/government
 - The current government agrees with the objectives, but not the vehicle (the water fund itself)
 - That is why they are working on the ordinance

Are there other water funds implementing this?

- In other water funds sanitation is an issue, but not as much of a priority (e.g., for larger water funds the smaller communities are not as much of an issue)
 - In Quito for example, the water company has bought up all of the land around the taking point of the water, so it's not an issue
- There are sanitation issues in other environments, but it does not rise to the top
 - Locally sanitation is very important because the humanitarian cause is very important, but it is not typically focus of water funds
 - The water funds are not really focused on developing an access solution for small communities
- Case-by-case basis: not all of the funds need to work in this to fulfill their objectives
 - You have to evaluate the need for integration of sanitation to accomplish the water fund's objectives

16. Uganda WASH Alliance

Sources:

- Interview with Wetlands International staff
- E-mail responses from WASH Alliance staff

WHERE and WHO

Where is the project located (city, country, region)?

Mpanga River-Mid-Western Uganda, Rwambu micro-catchment

What is the approximate funding amount?

Approximately 80,000 Euro for the last two years of their subcontracted work

Who are the partners (donors/funders and implementing organizations)?

Funder: Dutch Ministry of Foreign Affairs

Implementers: Simavi, IRC, Water for People, Wetlands International

Local Implementing Partners: HEWASA (Health through Water and Sanitation), NAWAD (National Association for Women's Action in Development), URWA (Uganda Rain Water Association), Emesco Development Foundation, Amref Health Africa, JESE (Joint Effort to Save the Environment), NETWAS (Network for Water and Sanitation), UWASNET (Uganda Water and Sanitation NGO Network), AFSRT (Agency for Sustainable Rural Transformation), USSIA (Uganda Small Scale Industries Association)

What is the timeframe of the project (months or years)?

The total project was five years (2011-2015) and they participated more in the last two years (2014-2015)

WHY

What were the objectives of the project?

Increase access to drinking water and improved sanitation for the community

What criteria/conditions led the project to be selected?

- The reality of diminishing natural resources
- Through a pilot project which later gained momentum and profiled the need for integrated water resources management.

The project had sustainability goals, categorized as financial, institutional, environmental, technological, and social. The main WASH implementing organizations realized that the environmental sustainability piece of the project was not being addressed and needed additional management (in contrast to financial technical, etc.). For example:

- The water table was quickly shrinking therefore some of the boreholes they were drilling became dry in the dry season
- The wetland was dying
- The overall ecosystem was degraded
- The increasing population growth and its dependence on the diminishing water resources
- Need for evidence based advocacy: the government needed to see that something worked before they bought in to the project

Wetlands International was brought on to the project to assist with this environmental sustainability component and specifically in application of nature based solutions and in wetlands conservation and management.

Why did the project integrate WASH and freshwater conservation goals?

- To test a new methodology
- To align with SDG 6
- **The project was interdependent (i.e., the WASH component needed the conservation component to be successful, or vice versa)**
- Other

Who drove integration?

- The project funder
- **The implementing organizations**
- Other

HOW

What were the key WASH components of the project?

The initial 2 years of the project were invested in studies and basis to inform implementation and practice as well as policy.

- Boreholes
- Rainwater harvesting
- Above-ground latrines (Ecological sanitation)
- Alternative livelihoods for the restoration of ecosystems
- Capacity building for the catchment management committees, local governments among others.

What were the key freshwater conservation components of the project?

Wetlands International worked specifically with the communities to conserve the wetland because they believe it is an important water storage area and important for recharging the groundwater. They also worked with another partner organization to implement a “3-R” – Retention, Recharge, and Reuse” intervention to assess and recharge the groundwater.

Specific interventions included:

- Demarcating the wetlands and planting trees around them
- Stone bunds, earth bands, check dams, among others, to collect water and stop it from rushing downhill
- Terracing the farmland for groundwater recharge
- Recharge pits
- Promotion of fish farming in the wetlands for instance for income generating without destroying the environment, coffee and other value chains were promoted.

Did one of these components come "first"?

Yes, the WASH objectives were the primary objectives of the project.

Which of these components were considered interdependent (i.e., one could not happen without the other)?

The WASH components depended on the conservation work, and the WASH work improved because of the conservation/IWRM work. Before the conservation and recharge interventions, the wells ran out of water during the dry part of the year. After these interventions, some of the boreholes no longer dried during the dry season. Although Wetlands International did not track

the baseline data sufficiently to show the direct connection between the conservation and recharge interventions and the water restored to the boreholes, there is a strong link between these activities and the restored boreholes were attributed to the conservation work.

RESULTS and LESSONS

What objectives of the project were/have been met?

WASH:

- 104,519 people with access to drinking water sources and improved sanitation sources

Conservation:

- Yes, they demonstrated that conserving the wetland is important to ensure a sustainable water supply
 - State of the wetlands and the ecosystem improved through their work
 - Some of the boreholes that were drying out were beginning to produce water
 - The community and local stakeholders witnessed the results on the ground of the different interventions put in place
 - The WASH organizations also heard the impact and the change from the communities themselves

The project has also made a big impact on livelihoods and climate change adaptation. As a result of this project, they are now continuing to work in this area on lobbying and advocacy work (through the Watershed Program), and they will be working in the larger Mpanga catchment.

What objectives were/have been not met?

Unsure. Currently exploring the socio-economic impact of this interventions.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

Yes. Below are the indicators:

WASH:

- The number of people with drinking water and improved sanitation access

Conservation:

- The extent of wetland demarcated
- The number of trees planted around the wetland
- How much people were appreciating that the wetlands were important in terms of their WASH sustainability (qualitative)
- The wild animals that returned to the wetlands

What were the main challenges of the project?

- IWRM is not well-understood and still requires a lot of education. Bringing the concepts to the WASH sector (which does things in a certain way) to help them understand a different way of doing things is not easy
- Measuring the socio-economic impact of this intervention on the catchment.
- The sectors are also divided in the Uganda government and have different ways of thinking: water supply and water resource management are completely separate; perspectives of social scientists vs. engineers vs. environmentalists vs. agriculturalists vs. economists are all different

Based on the experience from this project, what are your recommendations for other integrated projects?

- Baseline data to track causality: they did not do enough research of the baseline to determine if the conservation interventions increased the groundwater recharge in the boreholes
- Developing clearly defined indicators for monitoring outcomes and impact: this relates to the point mentioned above.
- Influence of Civil Society Organizations (CSOs): through this project they were able to build the capacity of the CSOs in the region, and now those CSOs are promoting the catchment-based approach of the conservation interventions
- Demonstrative examples motivate policy: through the success of the project on the ground, they garnered support from the water resource management department and this will help further policy efforts for a catchment-based approach
- Multi-stakeholder approach: one of the best things that IWRM really encourages in the multi-stakeholder dialogue and bringing all of the different water users to the table, which helped clarify understanding and unify the conservation approach of the project

PUBLICLY AVAILABLE INFORMATION

- Current Uganda WASH Alliance work: <http://www.washalliance.nl/country-alliances/uganda/>
- Infographic about 2011-2015 WASH Alliance work: <http://simavi.org/quick-read/best-practice-wash-alliance-international-results-2011-2015/>
- Simavi page about current WASH Alliance work: <http://simavi.org/what-we-do/programmes/dutch-wash-alliance/>
- Bring back Uganda's Rwambu wetlands: <https://www.wetlands.org/casestudy/bringing-back-ugandas-rwambu-wetland/>

17. Working together for health and sustainability in the Nosivolo River

Source:

- Conservation International fact sheet “Working together for health and sustainability in the Nosivolo River”
- E-mail responses and interviews with Conservation International staff

WHERE and WHO

Where is the project located (city, country, region)?

14 municipalities and 47 fokontany (villages) in Marolambo district, Atsinanana Region, Eastern Madagascar (home to the Nosivolo River)

What is the approximate funding amount?

Unknown.

Who are the partners (donors/funders and implementing organizations)?

Implementer: Conservation International

Partners: FIKRIFAMA and the LOHARANO Association (local health organizations); Durrell Wildlife Conservation Trust

What is the timeframe of the project (months or years)?

5 years

WHY

What were the objectives of the project?

Improve human health in the Marolambo district and the ecological health of the Nosivolo River.

What criteria/conditions led the project to be selected?

The Nosivolo River has rich freshwater biodiversity and an ample water supply, but the community was plagued by waterborne illnesses. Sewage was being dumped directly into rivers and streams, polluting the freshwater supply. Approximately 98 percent of Marolambo's population did not use latrines because they are seen as shameful and taboo. Seventy-five percent of local people were afflicted with schistosomiasis, a chronic parasitic illness.

The Nosivolo River is also the most important river in Madagascar in terms of biodiversity, and it supports a host of thriving freshwater ecosystems. Its waters support 19 endemic fish species, four of which are found only in the Nosivolo and nowhere else.

Why did the project integrate WASH and freshwater conservation goals?

To test a new methodology

To align with SDG 6

The project was interdependent (i.e., the WASH component needed the conservation component to be successful, or vice versa)

Other

Who drove integration?

The project funder

The implementing organizations

Other

HOW

What were the key WASH components of the project?

- Improve community health – improve access to WASH services, reduce waterborne disease, access to antibiotics, improve community nutrition
- Distributed free antibiotics to fight schistosomiasis and other worm parasites.

What were the key freshwater conservation components of the project?

- Restore the banks of the river to improve habitat, reduce erosion and improve water quality
- Establishment of conservation zones to reduce fishing pressure on fish populations
- Landscape level planning for infrastructure, conservation and agriculture
- Promote synergy between traditional culture and environmental conservation, such as encouraging communities to continue traditional forest protection practices
- Implement micro-projects focused on improving methods for crop production, to reduce exploitation pressure of the river.

Were there any joint WASH/freshwater conservation components of the project?

- Working with communities and schools in Marolambo to raise awareness of the connections between human and ecosystem health and how a healthy, river ecosystem can benefit both local communities and wildlife.
- Strengthen the capacity of local stakeholders, such as women's groups and community development groups, for long term management of freshwater resources and WASH investments
- Ensure the involvement of all stakeholders in advocacy and education, including government officials, community leaders, teachers and health services employees

Did one of these components come "first"?

CI first started working in the Nosivolo River because of the unique fish species found there. However, it quickly became apparent that reducing the human pressures on the fish populations could not be done without addressing the local community's need for WASH, especially improved sanitation practices.

Which of these components were considered interdependent (i.e., one could not happen without the other)? In this example, the conservation of fish populations was dependent on improving access to WASH and improving sanitation practices.

RESULTS and LESSONS

What objectives of the project were/have been met?

- Local communities and local authorities developed "ownership" over the management of their water resources by being involved in all activities from the beginning.
- The people are very aware of the areas' value and have implemented over 400 community development projects benefitting around 4,000 households.
- Improved access to sanitation targets were met. This positively impacted the river habitat quality for endangered fishes and resulted in an increase of fish populations.
- Over fishing has been minimized and river bank re-planting was carried out.
- 105 Local River Committees have been established and ~ 50 training workshops were held to reinforce new approaches for agriculture, good governance, and organizational and institutional strengthening.

What objectives were/have been not met?

- Even though WASH awareness was improved, new sanitation infrastructure was not built because of the lack of funding.
- Treatments for waterborne diseases were not continued after the project ended, because Marolambo is not a priority for the government and the medicine is too expensive for populations to support the cost.

How are project outcomes measured? Did monitoring integrate conservation as well as WASH metrics?

At the beginning, baseline information for the site was established and monitoring and evaluation were organized every year following specific indicators identified. The data was updated if new activities were implemented related to WASH and sustainable livelihoods. Periodic ecological assessments were conducted and those were used to revise/inform indicators. A database was established at Durrell Wildlife Conservation Trust's office that included information on ecological and development activities.

What were the main challenges of the project?

The main challenges were:

- Because of the political context, there were constant changes in local authorities. This made it difficult to engage all of them, to ensure continuation of actions;
- It was challenging to convince other actors to work in this region because of a lack of road infrastructure;
- Long-term sustainability of the project activities was difficult to secure because of funding challenges during the three last years.

Based on the experience from this project, what are your recommendations for other integrated projects?

- There needs to be a strong emphasis on stakeholder participation – community organizations, local authorities, women's groups, peer educators, etc.
- It is important to understanding the role traditional laws and customs in relation to behavior change and adoption of new practices
- Integrate communication messages between partners addressing environment, water, health, agriculture and fishing, and education
- Seek more funding to document additional lessons learned!

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