



USAID | TANZANIA

FROM THE AMERICAN PEOPLE



USAID/TANZANIA

Performance Evaluation for the Integrated Water, Sanitation and Hygiene (iWASH) Program: Final Report

November 2013

This publication was produced at the request of United States Agency for International Development. It was prepared independently by International Business & Technical Consultants, Inc. (IBTCI).

USAID/Tanzania

Performance Evaluation for the Integrated Water,
Sanitation and Hygiene (iWASH) Program

Final Report

Contract No: AID-RAN-I-00-09-00016

Order No: AID-621-TO-13-00002

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

EXECUTIVE SUMMARY

The goal of the Integrated Water, Sanitation and Hygiene Program (iWASH) is to support sustainable, market-driven water supply, sanitation, and hygiene services to improve health and increase economic resiliency of the poor within an integrated water resource management framework. There are five Intermediate Results: 1) increased access to drinking water and agricultural production water; 2) increased access to sanitation and hygiene services; 3) increased private sector capacity to deliver water and sanitation services; 4) increased capacity of communities and entrepreneurs to invest or engage in water and sanitation/hygiene activities; 5) and improved management of watersheds and water resources.

A Final Performance Evaluation was carried out between September and October of 2013 by a seven-person team that visited 45% of the project universe, 27 communities in the North served by international NGO consortium partners, and 21 communities in the South served by Tanzanian NGO sub-grantees. Seventy-seven Focus Group (FG) interviews were conducted (in water, school latrines, gender, agriculture, and Village Savings and Loan); average FG attendance was sixteen people with lively discussion and wide participation. Total participants were over 1250, 39% of whom were women. Visual inspections of project-built infrastructure, sometimes of several hours duration, also took place.

Objectives in **increased water supply** have been achieved in seventy villages benefitting 118,300 people with new or improved access to water. This is 113% of the target. The quality of the water system construction in the Final Evaluation sample is generally good (80% good or fair), and seems likely to improve if the project moves into a next phase. Upkeep and maintenance figures are similar. This has brought inestimable benefits, especially to village women, and substantial impacts in health and well-being are well documented.

Increased access to **sanitation and hygiene** has been achieved in forty villages benefitting 26,000 people, 107% of target, and 163,800 people in increased hygiene awareness, 123% of target. The quality of sanitation construction in the sample is somewhat less than in water (72% good or fair) because three systems are judged of unacceptable quality by the evaluation team. Regarding latrine upkeep and maintenance, 86% are reasonably well-maintained.

Increased **private sector capacity** to deliver water and sanitation services has been accomplished, and the project is clearly having impact beyond the project area. Objectives in the **development of credit mechanisms** to invest in water services financing were not ambitious and were accomplished at modest levels. Improved **management of watersheds** has been accomplished through a wealth of innovative activities, important and high-quality research, and engaged project participation in national and basin-level fora.

Regarding project management, the evaluation team surmises that a more holistic management structure might avoid some of the "silo" problems that frequently accompany complex projects like iWASH. A second key issue has been iWASH supervision of Tanzanian local implementing partners and sub-contractors. One international consortium partner, CARE, had serious difficulties implementing a new financial system that significantly impeded aspects of its project performance. Gender, a specific area of concern to USAID/Tanzania, appears to have been addressed adequately. The project appears to be growing "organically," and the demand for project services now exceeds its capacity to respond.

Conclusions respond to nine USAID/Tanzania Scope of Work questions, the first of which is iWASH program effectiveness, which is rated high:

- In improved natural resource management, innovative and scientifically important work has been done supporting improved Water Basin knowledge and management of the water resource. The breadth and depth of these activities are impressive.
- In rural development, objectives have been achieved with important early successes in agricultural demonstration in project areas.
- In improved water supply, objectives have been accomplished in large measure and to reasonably high standards; in sanitation and hygiene, to a somewhat lesser degree. Objectives in private sector promotion have been satisfactorily accomplished.

Three levels of Lessons Learned and Recommendations are offered.

- At the **partnership level**, a suggestion is offered how to deal with the "silo" issue.
- At the **conceptual level**, if a new project is developed, continued emphasis should be given to improved water supply and school sanitation at current levels (but not necessarily individual latrines), to private sector development, and to an expanded pump technology "menu."
- More resources should be put to agricultural development to continue MUS gains achieved to date. A somewhat higher percentage of resources should be allocated to local implementing partners and to watershed management and water resources issues than in the current budgets.
- At the **operational level**, more oversight of local implementing partners is suggested for both high and low performing NGOs and sub-contractors. It is suggested that a Quality Assurance cell be created among the partners and meet regularly, and that project staff return to previously built systems to learn more about "post-inauguration" issues. Numerous ideas for technical improvements are suggested by the appendices.
- In broad terms, the overall recommendation is that the overall approach being employed to deliver services and meet the goals of iWASH impact is working effectively and the project is accomplishing important objectives and should be retained going forward.

ACRONYMS

CBO	Community based organization
COWSO	Community-owned water supply organization
DP	(Water) distribution point
EFA	Environmental Flow Assessment
ET	Evaluation Team
FG	Focus Group
FIU	Florida International University
<i>fundu</i>	Local plumbers, masons and pump repairers
GETF	Global Environment and Technology Foundation
GoT	Government of Tanzania
IDYDC	Iringa Development of Youth, Disabled and Children Care
IR	Intermediate result
KII	Key informant interviews
iWASH	Integrated Water, Sanitation and Hygiene Program
LGA	Local government authority
LIP	Local implementing partner
LNGO	Local non-governmental organization
LOP	Life of Project
MSABI	<i>Maji Safi kwa Afya Bora Ifakara</i> ("Safe Water for Better Health")
MoWI	Ministry of Water and Irrigation
MUS	Multiple use water services
NAWAPO	National Water Policy
NRM	Natural Resource Management
O&M	Operation and maintenance
<i>sanplat</i>	Latrine platform slab
SHIPO	Southern Highlands Participatory Organization
SWASH	School water supply, sanitation and hygiene
TAHA	Tanzania Horticultural Association
Tsh	Tanzania shilling (~Tsh1600:::\$1.00)
VSL	Village Savings and Loan
WADA	Water and Development Alliance
WASH	Water supply, sanitation and hygiene
WRM	Water Resource Management
WSPD	Water sector development program

ACKNOWLEDGEMENTS

The Evaluation Team (ET) wishes to thank USAID/Tanzania staff, particularly Mikala Lauridsen and Gilbert Kajuna, for their insights, guidance and collaboration throughout the evaluation process. We also express our gratitude to the iWASH project staff for its courtesy and cooperation throughout the study, to Vivienne Abbott, the iWASH Project Director, and to all of her staff. We appreciated the level of trust project staff demonstrated in us and their willingness to share project strengths and weaknesses.

Special thanks are given to Kees Vogt and his Winrock team who were instrumental in putting together the complex travel arrangement required to carry out the ambitious travel schedule of this evaluation and for the expeditious way in which village introductions were handled. The ET could not have gotten to so many places in such a short time without this invaluable contribution

Warm thanks and special appreciation are offered to Mostafa Nurdin Issa of CARE International and Sigen Samson of Winrock International for serving as guides to the ET and presenting us to the communities at the start of each visit day, and for accompanying us on all of our travels with so much grace and good humor.

Finally, a note of thanks to Keith Williams, Director of the Feed the Future project in Morogoro, who offered the evaluation team invaluable service in planning logistics.

As always, the opinions expressed in this document are those of the evaluation team alone and do not represent the opinions of IBTCI or the United States Agency for International Development.

TABLE OF CONTENTS

1.	BACKGROUND.....	1
1.1	Project goal and intermediate results	1
1.2	Life of project funding	2
1.3	Scope of work.....	2
2.	EVALUATION DESIGN, METHODOLOGY and LIMITATIONS.....	3
2.1	Evaluation design and methodology.....	3
2.2	Methodological limitations	5
3.	FINDINGS	6
3.1	National context and program backdrop.....	6
3.2	Evaluation findings in water	7
3.3	Evaluation findings in school sanitation and hygiene	11
3.4	Evaluation findings in private sector capacity in WASH.....	15
3.5	Evaluation findings in community and informal sector involvement in WASH	16
3.6	Evaluation findings in watershed and water resource management.....	17
3.7	Summary of findings.....	19
4.	PROJECT MANAGEMENT	20
5.	CONCLUSIONS	23
6.	LESSONS LEARNED and RECOMMENDATIONS.....	28
6.1	At the consortium level	28
6.2	At conceptual level	28
6.3	At operational level.....	29
6.4	Concluding comment.....	30

APPENDICES

Appendix A: iWASH System Evaluation Worksheet

Appendix B: Key Informant Interviewees

Appendix C: Focus Group Questionnaires

Appendix D: Field Travel Schedule

Appendix E: Technical Suggestions

LIST OF TABLES

Table 1: Program Results Structure

Table 2: Water System Quality and Usage/Maintenance

Table 3: Evaluation of SWASH System Quality and Usage/Maintenance

Table 4: Summary Findings of Infrastructure Quality and Maintenance

1. BACKGROUND

The Tanzania Integrated Water, Sanitation and Hygiene Program (iWASH) started in January 2010. Implementation of activities started in July 2010 and the program was originally envisaged to end in December 2012. The WADA II Project is an integral component of iWASH and officially started in September 2010, partially funded under a separate mechanism with the Global Environment and Technology Foundation (GETF) and envisaged as a three-year project to end August 2013. A one-year no-cost extension was approved by USAID enabling iWASH and WADA II to be completed together in December 2013. Currently, a cost-extension to these activities is under discussion. This document is the Final Performance Evaluation of the original (and amended) grants.

The project addresses some of the most pressing needs in Tanzania – water, sanitation and hygiene provision for the rural poor – while also addressing the linkage between water supply and watershed protection and management. It focuses on improved water, sanitation, and hygiene services to communities living near ecologically sensitive areas; and it improves water resources protection and management through training, capacity building, and strengthening of governance structures at the community, District, and watershed levels. The program aimed to impact the lives of over 70,000 people – later amended to 104,000 -- and to inform policies and development strategies through implementation of innovative, cross-cutting approaches around access to safe, clean water.

Key project partners are the Ministry of Water, Wami-Ruvu Water Basin Office, the regional authorities especially for Morogoro region, Local Government Authorities in the Districts, research and academic institutions (e.g. the University of Dar es Salaam), local implementing partner NGOs (MSABI, SHIPO, IDYDC), and the private sector (e.g. ENVICON).

1.1 Project goal and intermediate results

The goal of the project is to support sustainable, market-driven water supply, sanitation, and hygiene services to improve health and increase economic resiliency of the poor in targeted rural areas and small towns within an integrated water resource management framework. The project proposed a multiple-use water services approach (MUS) which integrates water service provision with sanitation and hygiene in a coordinated framework to achieve sustainable and equitable improvements in access to water, income, health, hygiene, and food security. The (revised) results structure is as follows:

Table 1: Program Results Structure¹

Objective	Intermediate Results	Indicators
1. Increase sustainable access to water supply by poor rural and small town dwellers	IR1a. Increased access to drinking water supply by poor rural and small town dwellers in target areas	1.1 Number of people in target areas with access to improved drinking water supply (as a result of iWASH interventions)
	IR 1b. Increased productive use of water supply by poor households in targeted communities	1.2 Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change (as a result of iWASH interventions)
2. Increase sustainable access to sanitation and hygiene services by poor rural and small town dwellers	IR2. Access to sanitation and hygiene services increased for poor rural and small town dwellers in targeted areas	2.1 Number of people in target area with access to improved sanitation facilities (as a result of iWASH interventions)
		2.2 Number of people sensitized on hygiene &

¹ Taken from the Project Monitoring Plan- revised May 2013. This matrix differs from the approved IBTCI Performance Monitoring Plan and was suggested by USAID/Tanzania as the operative document.

Objective	Intermediate Results	Indicators
		sanitation
3.a Increase the number and capacity of private sector entrepreneurs and business	IR3a. Increased private sector capacity to deliver WASH services in target areas	3.1 Number of private sector WASH-related product and service providers adopting improved technical &/or business practices as a result of iWASH-supported training or interventions
WADA II specific addition		
3.b Develop capacity of local government and NGOs to provide WASH services	IR3b. Increased LNGO and local government capacity to provide WASH services in target areas	3.2 Number of LNGO and LGA partners actively engaged in WASH service provision in iWASH target areas
4. Increase access to sustainable financing for communities and entrepreneurs engaged in WASH services	IR4. Increased capacity of communities and informal sector entrepreneurs to invest or engage in WASH activities in target areas	4.1 Percentage of VSL group members investing in WASH services and products
		4.2 Proportion of female participants in USG-assisted programs designed to increase access to productive economic resources
5. Increase sustainable management of watersheds and water resources quantity and quality	IR5. Improved management of watersheds and water resources with community participation	5.1 Number of person hours of training in NRM supported by USG assistance
		5.2 Number of people trained in NRM/WRM
		5.3 Number of climate vulnerability assessments conducted as a result of USG assistance
		5.4 Number of hectares of biological significance under improved NRM/WRM as a result of USG assistance

1.2 Life of project funding

The total iWASH budget over a 4-year LOP (as amended) is \$14,888,126. A total of \$13,836,339 was channeled through the 4-year Cooperative Agreement (CA) between USAID/Tanzania and Florida International University (FIU). The amount includes Water-for-the-Poor Congressional Earmark funds, as well as FY2010 Biodiversity and FY2011 Climate Change funds. Also included in this CA is USAID/Tanzania's commitments of \$793,858 in total to WADA programming in FY2010 and FY2011.

An additional award was made to FIU and Global Environment & Technology Foundation under a public/private partnership and Water and Development Alliance (WADA). Under this award \$1,051,787 is channeled through GETF, and \$793,858 was added through USAID mentioned above, making a total of \$1,845,645 funding for WADA for 1 September 2010 through 31 December 2013.

1.3 Scope of work

The evaluation's purpose is to help inform USAID and relevant stakeholders on:

- a. The overall key achievements and outcomes of the project;
- b. Effectiveness of the project's approach in meeting the aim of the USG goals for water, biodiversity and climate change;
- c. Effectiveness of the project and its integrated design in achieving intended results; and,
- d. Sustainability of the approaches and potential for scaling up.

Specific evaluation questions identified by USAID were as follows:

1. How effective has the iWASH program approach been in reaching intended outcomes of the program in the key programming areas of natural resources management, rural development, and water supply, sanitation and hygiene (WASH)?

2. What have been the strengths and/or weaknesses of the iWASH program approach (e.g. capacity development, service delivery)? How relevant are the program targets (e.g. coverage, geographic focus, target beneficiaries) and implementation approaches (e.g. capacity development, service delivery) in achieving intended results?
3. Has gender been appropriately considered in the design and implementation of the program? Have both men and women benefitted and how?
4. How effective is the program monitoring systems and oversight, reporting and documentation? What are some identified key recommendations and lessons learned which could enhance project performance? Which approaches have the potential for being scaled up?
5. What are the underlying key constraints/opportunities (internal/external) that have potentially impacted performance of the program (capacity, staffing, organizational support, etc.)?
6. How cost effective is the program approach and implementation (e.g. management structure, resource distribution, funding streams)?
7. How adaptive is the current program approach in meeting program priorities? What are some identified key recommendations and lessons learned which could enhance program performance?
8. Based on the recommendation from the mid-term evaluation of 2011, how successful has the program been in starting to scale up approaches (H/H WASH, service delivery, water management, and water productivity) and what are the opportunities/ challenges for further scaling up?
9. How sustainable is the current iWASH approach in terms of service delivery, water resource management, and WASH?

In addition to these evaluation questions, the evaluators were tasked to assess gender and cultural sensitivity as follows:

- Describe the project's approach to mitigating constraints and opportunities related to gender.
- Has the project integrated gender considerations into its activities? If yes, how?
- How did the project integrate findings from gender analysis into its activities?
- To what extent have both sexes participated and benefited from project activities?
- What were gender integration challenges and benefits for project implementation?
- Did the project interventions have any influence on the status of women and men? If yes, describe.
- Has the project developed any measures to enhance women's participation in project activities? What were they?
- How did the different roles and status of women and men within the community, workplace, and household (e.g., decision-making; access to and control over resources and services; etc.) affect project implementation and results achievement?

Chapter Two discusses Evaluation Methodology, Chapter Three, Findings, Chapter Four, Management Issues, Chapter Five, Conclusions, and Chapter Six, Recommendations. Appendix A is a list of all communities visited plus detailed notes on construction quality. Appendix B provides a list of key informant interviewees. Appendix C provides the Focus Group questionnaires. Appendix D shows the schedule of field travel. Appendix E offers a few small technical suggestions beyond those implied in Appendix A.

2. EVALUATION DESIGN, METHODOLOGY and LIMITATIONS

2.1 Evaluation design and methodology

IBTCI's Proposal for the evaluation included the following:

- A retrospective, performance evaluation design employing mixed methods to evaluate the iWASH program, involving a random selection of 20-25% of iWASH activity sites. Among 68 sites in

Morogoro Region, IBTCI proposed to draw a random sample of 14-17 sites (20-25%). The sample would be stratified to ensure proportional representation among intervention types and implementing organization (Winrock, CARE), with a similar sampling approach for Rufiji Basin sites.

- *Key Informant Interviews (KII)*: The Team would meet with relevant key stakeholders, including project personnel, government (e.g., Ministry of Water, Basin Office), donors, NGOs and CBOs in Dar es Salaam and the regions. The Team would use KIIs at the central level to understand perspectives on iWASH, including the Ministry of Water and Irrigation (MoWI) and the Ministry of Environment. District-level interviewees would include regional authorities, LGAs, Water Board, and community leaders.
- *Direct Observation (DO)*: Site visits would provide an opportunity for team members to verify reported activities. For example, verification might include assessing the state of construction or rehabilitation of sanitation and water facilities, their condition, whether they are operational, the degree to which they are utilized at the time of the site visit, and whether students appear to be washing hands after using the facilities.
- *Focus Group Discussions (FGs)*: FGs would enable greater depth in understanding the experience of program beneficiaries. Focus group participants would be asked about iWASH's effectiveness in promoting rural development and community-level water supply management, changes as a result of iWASH activities, the differential effect of project implementation on men and women, key constraints and opportunities impacting performance, and recommendations and lessons learned to increase performance.

With full cooperation and essential input from the iWASH office, a purposive sample of 27 villages was selected in the Morogoro area. Two were categorized by the iWASH team as "best" communities in water, three as "second-best," and three as "difficult" communities; two additional villages were added where water construction is still on-going. In the selection, care was taken to include a mix of gravity-fed, borehole, and shallow-well/hand-pump schemes. Three school latrine sites were selected at random, and eleven additional on-the-way latrine communities were added to the sample: total 14 of a universe of 40. Three WADA II sites of a universe of 8 were also selected at random. In sum, 2+3+3+2 water communities, plus 3+11 schools, plus 3 WADA II = twenty-seven communities in the North were visited. In the South, twenty-one community sites were chosen with sub-contractor input when the Southern Team arrived to the area, primarily based on random sample and geographic accessibility.

The Evaluation Team was composed of an expatriate Team Leader and six Tanzanian staff: one expert in project evaluation who also served as the deputy team leader, one gender specialist and one rural development per team, and a translator for the Northern team. The team in the North covered Mvomero, Gairo, rural Morogoro and a part of Kilosa districts. The Southern team covered Njombe, Wanging'ombe, Iringa, Kilolo, Kilombero and a small part of Kilosa. iWASH and LIP staff scheduled appointments with the communities and prepared introductory letters prior to the arrival of the evaluation teams. See Appendix A for a complete list of villages visited.

Both primary and secondary data were collected during the evaluation process. Desk review of secondary data availed of numerous existing documents such as project proposals, proposal modification, baseline surveys, impact assessment reports, environmental impact, annual work plans, quarterly reports, the mid-term evaluation, and relevant GoT policy documents. Primary data collection tools included observations, informal conversations and community stories and were used to triangulate and complement the data.

Most primary data were collected through personal and group discussion with stakeholders. Focus Group (FG) guides were developed and translated into Swahili in a Team Planning meeting and pretested at the onset of the evaluation (Appendix C). Seventy-seven Focus Group sessions were conducted (in water,

school latrines, gender, agriculture, VSL), a large number, to make the findings as robust as possible. Excluding the six largest sessions, which due to their size were similar to town meetings, average participation in FG sessions was sixteen people. Generally the FGs took place as planned, each event lasting from 75 minutes to 2 hours with lively discussion and wide participation. The total number of FG participants was over **1250**, 39% of whom were female. Detailed notes were taken of each FG session and an English translation prepared. Gender FG sessions were carried out by the gender specialists exclusively with women. **Forty-five percent** of project communities were visited, 27 in the North and 21 in the South.

Discussions were held with community members who responded to iWASH staff's invitation to come, thus the number of participants varied from a minimum of 3 to a maximum of 79. The ET did not forcibly exclude a large part of the waiting group in order to create a traditional focus group environment; instead it took advantage of high village participation to create a space to hear the expression of *community* perceptions as well as a traditional focus group methodology might have. The validity of overall findings is suggested by the large sample size: this exercise was not a handful of focus groups but a quite large number of community discussions. The FG guides were deliberately designed with open-ended questions, and a two-member focus group team conducted the sessions and took written notes.

It is worth noting that when a "pure" focus group methodology was carried out in eleven Gender Focus Groups, ten or twelve participants in a quiet, intimate setting, results did not in any substantial way differ from the community discussion results.

Regarding construction activities, direct observation was used to verify the improvement in service delivery of the water supply schemes and public latrines, supplemented with photos and gathering community stories. Comparisons with national standards were applied where appropriate to determine the effectiveness of project outcomes. Water Point Mapping (WPM), national School WASH Guidelines, COWSO guidelines, NAWAPO (2002) and WSDP documents helped in making inferences on improvement of services, effectiveness, and sustainability of project outcomes.

Primary data were also collected in meetings with various key informants from national to local levels and included government (e.g. Ministry of Water Director of Water Resources and Directors of Rural Water Supply), River Basin Offices (for Wami-Ruvu in Morogoro and Rufiji in Iringa), Local government authorities (such as the District water engineers for Kilosa and Mvomero), Councilors and health wards officers (Kiberege ward in Kiombero district), the private sector (like pump manufacturers and drillers in Iringa, Njombe and Ifakara). Twenty people participated in key informant interviews (Appendix B).

2.2 Methodological limitations

As described in the approved Performance Evaluation Plan (PEP), a non-experimental study design lacking a comparison group contains inherent limitations. Evaluation results do not support strong causal inference since formative evaluation questions are aimed at understanding how well the project was delivered. The non-probability sampling used for selecting villages and focus group participants does not produce statistically representative findings and thus has limited external validity.

With the heavy emphasis in the original proposal and the Performance Evaluation Plan on collecting information from a wide net of project participants, the evaluation team developed an intensive three-week travel schedule, visiting 27 communities in the North instead of 17, and 21 in the South instead of 12: 45% of the project universe instead of the proposed 25%. The intensive interaction with villagers this heavy field travel presupposed brings certain limitations:

- The vast majority of evaluation team time was spent in the field, with comparatively little time spent in Dar es Salaam, thus national contextual issues were not a major focus of this study and were only addressed through key informant interviews.
- Similarly, the evaluation was not designed to report on the wider successes of sub-projects such as TAHA activities in all TAHA communities, or CARE's wider success in VSL promotion, or a given LIP's performance over a 1000 km² area.
- Community responses were solicited on 1) overall project impact in the present, 2) overall program quality, 3) the role of the community in achieving project outcomes, and 4) suggestions and recommendations. Therefore, questions related to the historical evolution of the project or the project's management structure were limited to indirect reference in Question #6.
- FG notes report *what the community reported*. If community comments were not challenged within the group, they were reported as they were voiced. For example, when the community reported the water tasted bad, the FG notes reflect that observation, but recognize this observation is not based on formal water quality analysis.
- The field travel took place at one point in time, and reports one day in the life of a community. If the system broke the day before, the ET reported on a broken system. If the latrine had not been cleaned since the morning and smelled bad, that got reported. If the community reported a well dried up in this Dry Season, it was that finding that got reported. The ET reported what it found, no more, no less.

3. FINDINGS

3.1 National context and program backdrop²

iWASH is funded under USAID/Tanzania's Strategic Objective 13, "Biodiversity conserved in targeted landscapes through livelihood driven approaches," addressing four intermediate results:

- IR1: Policies and laws that integrate conservation and development applied, by raising public awareness and supporting the effective and equitable implementation of the Water Resources Management Act 2009;
- IR2: Participatory landscape scale conservation practiced, by promoting water resource management and implementing WRM training programs, and contributing to the knowledge base of water quality and quantity;
- IR3: Transparent and equitable benefits from the sustainable management of natural resources, by piloting a "multiple use service" (MUS) approach aimed to meet basic and productive water use needs and generate financial benefits for livelihood improvements and sustainable financing for water supply;
- IR4: Improved Health and Well-being of general and vulnerable populations.

The iWASH program has been designed on the premise that for Tanzania to reach sustainable social and economic development, a more integrated and holistic approach must include a multiple use services (MUS) approach which integrates water service provision with sanitation and hygiene to achieve sustainable and equitable improvements in access to water, income, health, hygiene, and food security. These activities will be carried out within a larger watershed management approach, which identifies and protects important water sources, establishes and implements reserve flow allocations to ensure water to downstream communities and ecosystems, and develops environmental management systems and water safety plans

² Adapted from "Statement of Work: Performance Evaluation for the iWASH Program."

that protect water quality from source to point of use. Target areas for the program are the Wami-Ruvu Basin in Year I, and the Rufiji Basin in subsequent project years.

The National Water Sector Development Strategy recognizes that “there has been a historical failure to provide water supply and sanitation services to low income groups...thereby denying them social equity consideration, and the right to water for life and survival,” concluding “[at] the current rate, it will take 67 years just to reach the Millennium Development Goal for sanitation.” National development plans also recognize that priority should be given to increasing the availability of water for rural households.

Improving access to safe water and sanitation is only part of the solution however, as these services are inextricably linked to sustainable resource management. Catchments that provide the water must be protected to keep acceptable quantity and quality water flowing into the indefinite future. Developing and managing water resources must be integrated across multiple sectors, linking health, education, economic development and environmental conservation; and challenges in sustainability and governance must be addressed through cross-cutting approaches that develop people’s capacity to manage their own water resources and develop their economic potential.

3.2 Evaluation findings in water

The project goal in water construction was two-fold: to increase access to drinking water and the use of water for productive purposes, as follows:

Result # 1	Indicators
Increased access to drinking water supply by poor rural and small town dwellers in target areas	1.1 Number of people in target areas with access to improved drinking water supply (as a result of iWASH interventions)
Increased access to water supply for productive purposes by poor households in targeted communities	1.2 Number of stakeholders with increased capacity to adapt to the impacts of climate variability and change (as a result of iWASH interventions)
Reported achievements, Sept 2013	# 1: Total: 118,273/ 113% of LOP target # 2: Total: 863/ 29% of target w/ data still coming in

The Final Evaluation teams (ET) visited twenty-seven water systems during field travel, nine communities in the North, Morogoro, Mvomero, Kilosa and Gairo, and eighteen communities in the South, Njombe, Iringa and Kilombero. Assessment of the quality of the construction and its upkeep was developed on a scale “G” = Good; “Fr.” = Fair, and “P” = Poor (see Appendix A) and summarized below. The “Q” column relates to the quality of the physical infrastructure, materials and finishing and is attributable to project efforts, a project *output*. The Use/Maintenance column is attributable primarily to the community, and, thus, a bit of an *outcome*.

Table 2: Water System Quality and Usage/Maintenance (Evaluation Data, see Appendix A)

System Assessment	Q N=25	U/M N=26	Overall comments
Good	11	10	Good quality on most dimensions of rural water system construction. Good community maintenance.
Fair	9	10	Adequate construction quality, but areas where quality is not up to the project’s own standards. Community tariffs are generally not collected or maintenance is spotty.
Poor	5	6	Under-performance compared to the rest of the project. Poor community maintenance for various reasons.

System Assessment	Q N=25	U/M N=26	Overall comments
Pending	2	--	One complex situation, Mvumi, where project response is being studied. One new system, Kambala, where various planning steps have taken place but physical construction was not yet underway.

Field travel observations:

Overall construction quality is generally good in 20 of the 26 working systems, seventy-seven percent, though more so in the 11 that are rated Good than those rated Fair. This rating involves the evaluation teams' assessment based upon comparison with other project construction in the following areas: good quality cement work, quality materials such as valves, well-constructed valve boxes, overall finishing touches, painting and fencing where appropriate (see pictures below); in the case of gravity systems, well-constructed intake structures, buried adduction lines, well-built storage tanks, quality cement work at distribution points (DP), appropriate use of iron pipe at ravine crossings, appropriate anchoring of same, and others. Also an assessment of post-construction upkeep and maintenance by the community.



The project responded to a great need. There are a dozen or more reports from FG interviews of women prior to project interventions having to walk up to four hours to access water from village streams. These trips not only demanded enormous physical sacrifice, carrying a 20 liter jug of water on one's head for four hours, but also such a time investment also took the woman away from other aspects of domestic life. In communities where the project has been completed to satisfaction – all communities rated good and some rated fair – many of these women now have water almost at their doorstep.

Most of the women articulate with quiet conviction that this has allowed them to invest more time in productive agricultural activities, better food preparation, better child care, more involvement in their children's school work, more time for other household chores, and (even) more rest.

About half of the twenty-six (working system) communities reported improvements in health (the other half made no such assertion). There were numerous reports of reduced diarrhea, and occasional mention of reduced typhoid, bilharzia and cholera. Five communities reported that Ministry of Health "camps" that used to be set up to respond to an outbreak of community disease are no longer necessary.

Unexpectedly, four or five Focus Group reported decreased domestic violence. Women reported they frequently had to leave for the water source at 3:00 AM and to queue sometimes for hours at a low-volume source, not returning home until well after dawn, then to be beaten by husbands who thought they had been out on a tryst. In three FG discussions, there were unsolicited comments of reduced teenage pregnancies:

now that the adolescents could get water nearby, there was less opportunity to be out (unsupervised) for hours with a boyfriend.

Widely reported high order outcomes are improvements in health and in time saved that is now invested in household activities and agricultural production. Decreased domestic violence may also be a significant project outcome.

Based on successful pre-iWASH experience in the South, the Rope Pump was newly introduced in the North and has some significant advantages. It is inexpensive, easily repaired, a technology thoroughly “understandable” to villagers, and produced and sold by local artisans using 100% local materials. It is particularly well-suited to low-intensity use. In the decades-long history of hand pumps, these are tremendous advantages, and the project takes pride in promoting this (low-) technology and advocating for it in national fora.

The Rope Pump has disadvantages, too. The rope is easily stolen, as occurred in one Year I community where Rope Pumps were introduced. To meet the definition of “full coverage,” the project likely built too many too close together: some pumps are no more than 15 meters apart. The result in this community was that immediately after community artisans were trained in a project-sponsored maintenance course, widespread theft of the \$12.00 rope began. This village’s maintenance committee openly speculated that the artisans are cannibalizing a neighbor’s pump in order to charge for repairs. At time of ET visit, the Focus Group reported two-thirds of the 36 pumps installed had been vandalized, and project records report half that number. The village has taken a good decision to hire nighttime guards to sleep at the pump to prevent further theft. Apprised of these facts, the District Water Officer indicated his full agreement this situation required government intervention. While project monitoring shows this was the only community where this took place, it does show (unanticipated) disadvantages of such a user-friendly technology.

Almost all Rope Pump communities reported the rope breaking with considerable frequency depending on volume of usage and care. One rope has lasted two years, others break in two weeks. This is an important issue as the project has prioritized the introduction of this hand-pump technology as noted in the Mid-term evaluation (for the obvious advantages of paragraphs above). However, thoughtful project observers are beginning to speculate it may not be the most appropriate technology choice for heavy concentrations of households. Field visits suggest that where ten or twenty households are near the Rope Pump, it works well: when the rope breaks, people repair or replace it quickly. In larger neighborhoods of approximately fifty households, say, the rope may break so frequently that people get frustrated. A follow-on project might experiment with a thicker rope in heavier population concentrations, a slightly bigger feed-pipe and bigger washers. As recommended in the Mid-term evaluation, another possibility would be to broaden the project’s pump “menu” by including sturdier (though more expensive) models. The Afri-dev and the India Mark II are seen widely in Tanzanian villages, for instance—though one must recognize the trade-off that these two pumps bring in more difficult community maintenance. Another maintenance-friendly alternative could be the Tara pump³ promoted by UNICEF in India and Bangladesh in the thousands.

The market-development and commercial focus of Rope Pump production has been quite successful and will be discussed in IR3. If another project does go with sturdier pumps for denser populations, one can hope it would do so with the same market-conscious and commercial development focus with which the Rope Pump has been promoted.

³ Rural Water Supply Network, “Tara Pump,” <http://www.rural-water-supply.net/en/implementation/public-domain-handpumps/tara-pump>

Village groups overwhelmingly requested to be kept better informed of material deliveries and cost (both in water system construction and school latrines). iWASH reports community leaders have this information, but in all but three of 41 FGs,⁴ participants had no idea of the project value compared to the community co-share of which they were well aware.

Multiple use water services (MUS) is a key project pillar and the ET saw various iterations of the concepts. In ten of the twenty-seven water system villages visited, the evaluation teams saw visual evidence that economic activity is springing up around the distribution points (DPs). In gravity-fed systems where the water is usually much more voluminous, there were examples of vegetable gardening, brick-making, and even one small tree nursery. One project partner commented on people using their new water source for cattle troughs, gardening, irrigation, poultry keeping, brick-making, selling water, and other household purposes. Even in Rope Pump communities where water output is substantially less than in gravity-fed systems, there were examples of brick-making taking place near the pump.

There were other MUS findings in the North. Early on, it was seen that part of the project funding stream would not support MUS activities; and the project had to find creative ways around this dilemma. One way was by signing a sub-contract with TAHA, the Tanzania Horticultural Association, and Heifer International; and the ET saw important gains in agricultural demonstration in all five of the TAHA communities visited. In particular, TAHA's demonstration of low-lift foot-pump irrigation ("treadle pumps") is gratifying (Appendix A). The promotion of drip irrigation suffered a setback when the quality of the imported materials was unacceptable, and the inferior equipment was returned to the vendor. New good-quality drip irrigation materials were received in May 2013 and the ET saw good demonstration of drip irrigation taking place with the project reporting 240 drip irrigation systems being sold. Another innovative MUS activity is market-driven hand pump sales in one village. Heifer International activities were seen in two villages; and a recent project report shows 89% survivability of 1,575 chickens delivered to five villages, 82% survivability of 84 goats, and 85% survivability of 60 piglets. An iWASH-contracted external review is underway that will explore Heifer International results more fully.

MUS findings in the South showed mixed results, in part due to low water production in some communities and lack of information of the MUS objectives of the project in others. At Kikwawila, Mitiu, Welela and Isoliwaya, water for MUS purposes was not possible because of low pump output. At Kanolo where water supply was abundant (though not used for drinking or other household purposes because of iron manganese staining), the community did not use water for MUS activities, reporting they feared doing so would lead to the pump being taken away as had happened with another system in that village several years previously. In contrast, in Itunduma, water was being used to support a tree nursery that allowed one household to plant ten hectares of trees and through seedling sales earn enough to pay school fees. Vidunda Primary School used the water to create a lush school garden even at the peak of the Dry Season.

Overall, in the view of the ET, agricultural innovation has taken place in relatively few communities and with not much budget support. Nevertheless, interesting and exciting innovations are taking place that are worth expansion. Based on MUS activities the ET saw in its sample, the ET assesses a follow-up project would do well to build on these early gains.

Conflict between agriculturalists and pastoralists was described by one key informant as the most significant development challenge in all of Tanzania. iWASH has done a good job in addressing this issue. The pictures below show Msolokelo where two additional Distribution Points were added to the system. Not only is the addition of the cattle trough notable (an MUS concept), but also these two Maasai DPs are five or six

⁴ IDYDC communities are an exception to this finding because they commit to repaying 100% of the project and are thus well informed of its cost. See Chapter 4.

kilometers from the agriculturalist village. Thus the project had to incur considerable additional expense to bring water to these locations. Similar accommodation was made for another Year I system, Pemba (not visited). Year IV activities work with additional Maasai communities, Kambala that fell within the evaluation sample, and Twatwatwa and Mwade that did not.



The project has addressed the issue of communities’ ongoing Operation and Maintenance responsibilities by adopting the relatively new GoT mandate to create and strengthen community owned water system organizations (COWSOs). Since January 2013, project reporting narrates having promoted, organized and trained thirteen village COWSOs including discussions with over 750 people; helping the community draft a COWSO constitution and sharing the constitution with the village; in some cases registering the COWSO with District authorities; and working through the COWSO as the entry point to the village for water system affairs. The project also conducted a workshop to discuss issues related to COWSO formation at the District level. iWASH is in the vanguard of learning how to implement the new COWSO mandate in Tanzania.

The water component in the South (500 km distant) has worked exclusively through Local Implementing Partners (LIPs), SHIPO, MSABI and IDYDC. SHIPO was an early innovator of the Rope Pump and in the start-up of iWASH served as trainer and advisor to iWASH in the uptake of Rope Pump technology. It is widely recognized for quality work, and ET visits confirm that perception: of seven systems, four were Good and three Fair; in Upkeep and Maintenance, three Good and four Fair. MSABI is a similar quality LINGO; of five systems visited, one Good and four Fairs in construction, and three Good and two Fair in U/M. To be discussed in Chapter 4, the ET judges IDYDC has not performed as well as SHIPO and MSABI.

3.3 Evaluation findings in school sanitation and hygiene

Result # 2	Indicators
Access to sanitation and hygiene services increased for poor rural and small town dwellers in targeted areas	2.1 Number of people in target area with access to improved sanitation facilities (as a result of iWASH interventions) 2.2 Number of people sensitized on hygiene and sanitation
Reported achievements, Sept 2013	# 1: Total: 25,983/ 107% of LOP target # 2: Total: 163,822/ 123% of LOP target

The ET visited twenty-one school water and sanitation systems (SWASH) during the field travel, all but three of these communities are in the North. In addition to Focus Group interviews of adults, several FG sessions were also conducted with school children. As in IR #1, a summary of those visits and the ET assessment was developed. Refer to Appendix A where system-by-system observations are made.

Table 3: Evaluation of SWASH System Quality and Usage/Maintenance (Appendix A)

System Assessment	Q N=21	U/M N=14	Overall comments
Good	7	6	Good quality on most dimensions of school latrine construction. Good school cleanliness or maintenance.
Fair	6	6	Adequate project performance, but areas where project quality is not up to project standards. Cleanliness of latrine is spotty.
Poor	2	2	Under-performance compared to the rest of the project. Maybe part of the Year I learning curve? Poor cleanliness or poor maintenance.
Not yet finished	3		Most construction details look good but finishing work not yet accomplished thus no assessment really possible.
Unacceptable	3		Three systems where, in the judgment of the evaluation team, the construction should be rejected and needs to be re-done.

Field travel observations:

SWASH construction shows marginally less quality than water system construction; thirteen of eighteen with good or fair construction quality on those systems now finished (72%), with similar variation in quality among project sites. For the “Good” systems, this includes reasonably good cement work throughout the structure, good sanitary platforms (*sanplat*), adequate depth to the drop pits, well-built walls, rainwater runoff spouts (though generally not well attached), well-trussed roofs, adequate ventilation pipes, pit-cleaning possibilities, experimental hand-washing water tanks, rainwater harvesting, and others. As in IR #1, it should be noted there is a fairly significant difference in quality between the seven rated Good and the six rated Fair. Three systems are rated unacceptable and will be discussed below.

SWASH communities are quite pleased with their latrines. Similar to the water side of the project, the community contributed sand, bricks, and gravel; additionally they contributed labor to dig the latrine pits. Unlike water where the payoff is immediate improvement in quality of life, improved hygiene for project children can be hard to perceive. Communities were nevertheless delighted with their school latrine project: because the children now had a quality place to defecate, because sometimes the latrine was the best looking structure in the village, because the importance of improved hygiene was clear to all, because other communities had admired the new structure and asked how they could get one too.



Well-articulated as a desired *outcome* in the GoT “National Guidelines for School Water, Sanitation and Hygiene,” four or five Focus Groups mentioned that girls were now coming to school more than before the latrines were built. It is important to note this was an unsolicited comment volunteered by FG participants not an evaluator-induced question, and the project might be able to conduct a quick one-off study to confirm

this anecdotal finding. As development literature has recognized over the last decade, any intervention that fosters girls staying in school will pay multiple dividends. This could be a big project win.

SWASH construction has clearly taken into account draft guidelines in the October 2010 National Guidelines. There are dozens of examples, both large and small, of how iWASH is leading the way on experimenting with implementation of these guidelines: construction of rainwater harvesting, building special latrine for disabled children (including bars and elevated pedestal), ferro-cement hand-washing jugs, ventilated improved pit latrines (with *sanplat*), "tippy-tap" hand-washing, boys' urinals, girls' menstruation room, pit emptying capacity, others. The project supports GoT conceptual work in "ground-truthing" these guidelines at the same time.

The project also emphasizes hygiene promotion as also called for in national guidelines. The ET attended a charming presentation in Mnjilili where the children recited a composed-for-the-occasion poem and sang a song about the importance of hygiene in the community including comparisons before-and-after. Other aspects of the national guidelines seen in other communities were: school health clubs in five or six schools; rotational cleaning by the children, even in the face of their having to bring water from 2 km distance at the start of the school day; parental contributions for latrine cleaning; and existence and functioning of a school committee. There was also discussion in many communities whether the latrines should be used by the larger community, with most voting "no" because that would complicate keeping them clean. Ratification of that point came in one community where the project built an (extra) latrine at the nearby health post, and it was filthy.

Unfortunately, implementing national guidelines on the priority use of soap was hard to see. Only three of the eighteen school latrines in operation showed children's regular use of soap and water for latrine cleaning and for personal cleanliness. One well-educated headmistress even admitted: "I haven't had time to pay any attention to use of soap." This is clearly where national hygiene guidelines lag far behind. In similar fashion, a mechanism for adequate disposal of menstrual pads was only in evidence in one of the eighteen communities.

There is a surprising amount of design variation in these constructions, perhaps too much. There are at least six different window designs and almost as many pedestal designs. Also, there are various supports to the rainwater gutter – most of them inferior, bare, rusting wire, but also galvanized iron brackets, and even a high-quality PVC bracket. Project implementers point to a conscious decision to pilot different options as part of the learning curve. Perhaps more design standardization might produce a more uniform, higher quality product.

One adjustment the ET noted is the first-year budget addition to the SWASH component to build teachers' latrines not originally envisaged in the project budget. This decision directly contributed to higher teacher involvement in the project and reinforced the message of hygiene importance for all, children and adults alike.

Rainwater harvesting via school roof runoff to a specially constructed storage tank may need further thought. Throughout the travel, these rainwater storage tanks were seen empty during this Dry Season, and the tank's capacity to provide drinking water in schools of up to 1,000 children is recognized by project staff as unrealistic. However the ET also recognizes it is impossible to assess a primarily Wet Season intervention at the peak of the Dry Season. The evaluation simply notes this issue for further study.

Many water tank tops in SWASH communities are yet incomplete: poor cement work, inadequate sanitary seal, the lid half-fitting the hole. In a half a dozen sites visited this defect must be fixed before the end of the project. Subsequent correspondence with the project implementer has committed to this goal.

There is a strong conceptual link between school latrines and children taking the message home to their parents and promoting family latrines. The Focus Group questionnaire addressed this by asking: “What about the adults in the village? Where do they go for their necessities? Do adults understand the importance of latrines, and the link to reduced diarrhea and cholera?”

Responses varied greatly. Seven of twenty-one FGs suggested most in the community had a personal latrine and were using them. Another ten responded that use and coverage is low, reportedly 35% in one FG. The remaining four are in between, with “understanding” reported generally good but “use” quite variable depending on the community. There was only one community where the linkage between children’s use of school latrines and adults motivated to change behavior was clearly voiced and another where the idea was expressed in less clear terms. Overall, in the North the evaluation sample would suggest that some gains are being achieved in sensitizing villagers to the importance of individual latrines, but progress is slow. In the South, individual latrine promotion has been reported by LIP partners through the life of project but the topic was not researched in depth during ET travel. Perhaps the best assessment of this component comes from project reporting which notes in the June and September 2013 Quarterly Reports, “progress on promoting household sanitation remains disappointing.”

One SWASH project has been rated by the ET as unacceptable, that of Mnjillili. The issue is not the girls’ latrine, which is of high quality, but rather that budget re-allocations mean the boys’ latrine that was promised the community has been cut, leaving the community with a sense of being defrauded. The possibility of retaliation against girls for being favored by the project and/or possible defacement or destruction of the girls’ latrine if this is the final decision cannot be ruled out. The ET believes this decision urgently requires review.

The randomly chosen evaluation sample produced three WADA II communities to be visited of eight financed by the sub-grant. The first visit showed inferior quality of the cement work (only six-month-old) and dark, windowless latrines reported by the children. The second site demonstrated shoddy workmanship throughout: “thin” cement mix, poor wood quality, falling rainwater spouts, and a complete lack of attention to detail. In this Focus Group, the community, without solicitation, said it was so dissatisfied with the workmanship that it would not accept delivery of the structure. The third project showed the Rope Pump was not working, possibly due to contractor-caused cracks in the supposedly rehabilitated subterranean storage tank. The school latrines showed appalling wood quality – not painted or cured, no signage, an unsupported water pipe standing in the middle of the yard, drainage accumulating at foot of standpipe, empty cisterns, and teachers’ latrines built without cement mortar then whitewashed. Overall, in ET opinion, construction that should not be accepted. Both of these systems were three to four-and-a-half hours from the iWASH office, the only system along that road, and implemented by a sub-contractor. Based on two-of-three systems of unacceptable quality and the third of only fair quality, the ET judges project supervision of SWASH activities of the WADA sub-grant has substantially under-performed. In subsequent correspondence, the project implementer has recognized certain weaknesses in supervision and has taken action to improve performance.

As a final comment (to both the water section and the SWASH), all FG discussions included the question “Has your experience with the project given you a sense the community can do more?” to assess what development practitioners call a heightened sense of *Agency*. While approximately 25% of FG respondents answered “no, they didn’t think so,” 75% of communities think they have learned how to organize themselves better and how to generate community enthusiasm for new projects and community financial support. Four communities in the North reported they are embarking on a second round of projects: another school latrine in a nearby school, a community-built dispensary, a proposal for a water project to complement the school latrine project. These are unexpected and satisfying outcomes.

3.4 Evaluation findings in private sector capacity in WASH

Result # 3	Indictors
Increased private sector capacity to deliver WASH services in target areas (iWASH)	Number of private sector WASH-related product and service providers adopting improved technical and/or business practices as a result of iWASH supported training or interventions
Reported achievements, Sept 2013	LOP Total: 22 pump manufactures trained; 16 still active. Over 1,100 pumps manufactured and sold.

The evaluation team visited several artisan pump manufactures in both the North and the South to study the technology (and marketing) of Rope Pump manufacture.



In both the North and the South, the project has trained several dozen artisans to produce Rope Pumps. In addition, it has standardized design specifications and trained artisans to these standards. The project also reports training a like number of well drillers in low-technology drilling techniques. As an outgrowth of Rope Pump promotion, the project has also worked on issues of ground water recharge and rainwater harvesting.

The two artisans pictured above, Abdallah Chunga and Daudi Karunde, report selling 180 pumps this year. Previously they were simple welders working for others. After receiving iWASH/SHIPO training, they have become entrepreneurial business men, and are making a good living manufacturing and selling the pumps in the open market. Each of them reported independently they have made enough to buy themselves motorcycles for the first time in their lives; they have added a room or an addition to their houses and they are paying their children's school tuition. Another producer in the South, Mr. Kevin Mwanyika, has produced 106 pumps and reportedly has orders from Dodoma and Singida, 500 km away. A project brochure lists the names of these gentlemen with telephone numbers and another 12 besides. The brochure also lists the names of pump manufactures in Singida, effectively demonstrating the project is expanding the reach of the Rope Pump influence.

Mr. Karunde has become so entrepreneurial that on his own initiative, he reports visiting rural areas on "promotional visits," (some of them, traveling an amazing 600 km to do so) to convince villagers to contract his services. Beyond that, he is beginning to think about "spec-building," installing the pump with his own resources and charging the village only if water is delivered successfully. Another suggestion from Mr. Karunde is that if the project could pay him per diem for a seven or ten day stay in a village similar to the per diem the project paid him when he attended the SHIPO training course, he could promote, build and have functioning at least a half-dozen pumps by the time he leaves. This might prove interesting as "out-of-the-box" Rope Pump promotion.

The project has done a credible job with leaflet distribution and other publicity activities in the North and South, in rather traditional ways. A video is in production at this writing. A paid television-advertising program would be more unusual and might give the Rope Pump wider exposure. It was, in fact, an idea suggested by Mr. Karunde

In the South, the ET met four artisans engaged in pump manufacturing and also drilling shallow wells, installing Rope Pumps themselves, demonstrating Rope Pump technology, marketing, and collecting data on rope performance and quality assurance. The Uvinjo group of Njombe now owns and operates a registered Rope Pump workshop with annual sales of up to 200 units per year (at 250,000 Tsh. or US \$150 per community group), and they believe with continued demand, expansion opportunities still exist. The Kisangani group believes it has the capacity to manufacture 1000 pumps a year provided there is sufficient demand: last year this group sold about 600 pumps to Uvinjo, SHIPO, and other consumers in and outside Njombe. The Kevin Metal Works in Iringa estimated its production capacity at 100 Rope Pumps per year while Ramadhani Mumba, an entrepreneur in Ifakara, put his production potential at 240 pumps per year. Clearly Rope Pump technology is taking off.

All these artisans however expressed dissatisfaction with the Government's failure to recognize their efforts and GoT lack of trust in the Rope Pump. They believe with more government backing this technology could address water supply scarcity in rural Tanzania and increase employment among the youth. They also feel they could have done better if the project arrangement they operate under could allow them to seek markets more independently. They report their project relationship does not allow them to make contact with customers directly but only through the partner, which sometimes constrains their growth.

Regarding water filters, iWASH reports a total of 3,553 filters sold by June 30, 2013. LIPs in the South report some success with water filter promotion: distribution of a filter in 48 primary schools in one District; selling 500 filters in another; sale of another 930 elsewhere; and other promotional activities taking place as well. iWASH senior staff has not been satisfied with one company's national level performance, and that MOU has been annulled and water filters are being recovered from the distributor.

3.5 Evaluation findings in community and informal sector involvement in WASH

Result #4	Indicators
Increased capacity of communities and informal sector entrepreneurs to invest or engage in WASH activities in target areas	Percentage of VSL group members investing in WASH services and products
	Proportion of female participants in USG-assisted programs designed to increase access to productive economic resources
Reported achievements, Sept 2013	Total LOP accomplishment: 2,156/ 56.6%. Target under-achieved, but actual total of women benefitted exceeds original target

As discussed immediately above, there has been considerable achievement in "informal sector involvement in WASH activities." However in terms of Village Saving and Loan (VSL) members' investing in WASH services, Focus Group interviews suggest this indicator has not been much achieved.⁵

⁵ For readers unfamiliar with VSL, a few background comments may be in order. A decade ago CARE developed the VSL concept, basically a savings scheme whose members contribute tiny amounts of savings each week and then in rotation receive a loan of the accumulated amount for productive purposes. All funds generated by the group stay in the group, and the group is completely autonomous and independent of outside financing. The design has had tremendous success, and CARE is recognized as a world leader in VSL. CARE Tanzania has implemented VSL for some years, with, one assumes, similar levels of success as CARE elsewhere in the world.

Specific FG discussions were held in six VSL villages that fell in the sample. Four of the six reported “not much effect” in the project’s helping to strengthen the VSL: in these communities VSLs had been founded before iWASH began. In two of the villages, only five VSLs were newly formed by the project; in another, CARE’s normal VSL discipline was not maintained and bad loan practices were adopted.

The ET surmises that CARE Tanzania’s VSL program is largely a “train running smoothly along well-oiled tracks,” guided by CARE’s world-wide VSL methodology. For instance, monthly and quarterly CARE monitoring on VSL have the feel they could come from a VSL project anywhere in the world: there is some tie-in to specific iWASH objectives, but not so much. Thus, as effective as VSL activities may be, reflected in the LOP totals, one senses the project has not been much able to encourage villagers into financing WASH activities.

In fairness, two qualifiers must be noted. First, the project design never envisaged great numbers in this IR, only proposing a modest 5% of VSL funds that would be re-directed to water or sanitation/hygiene financing. Second, as a savings-cum-loan program, if the VSL member does not see a potential for profit in water or sanitation activities, VSL philosophy and promotional messages suggest s/he should not take out such a loan. Thus under-achievement of this IR was probably appropriate. Echoing a mid-term evaluation comment, VSL’s importance to project success may have been in pre-disposing communities to new development ideas rather than in financing a number of WASH activities. Starting up in non-VSL communities, iWASH might not have gotten off to such a quick start or accomplished as much.

Given the low priority that hygiene occupies on a community’s list of needs as evidenced in the discussion in IR #2 –and how hard it is to conceptualize making a profit manufacturing *sanplat* – it is difficult to see a large number of VSL loans in sanitation as good business decisions. The effectiveness of local partners’ demand-based sanitation and hygiene efforts in the South was not assessed.

3.6 Evaluation findings in watershed and water resource management

An important innovation of the iWASH project is IR #5, the inclusion of watershed objectives to an infrastructure and community development project. The “i” in iWASH means the program takes an integrated, basin/catchment focus, working across key programming areas in natural resources management, rural development, and water supply, sanitation and hygiene.

Result #5	Indicators
Improved management of watersheds and water resources with community participation	5.1 Number of person hours of training in NRM supported by USG assistance
	5.2 Number of people trained in NRM/WRM
	5.3 Number of climate vulnerability assessments conducted as a result of USG assistance
	5.4 Number of hectares of biological significance under improved NRM/WRM as a result of USG assistance
Reported achievements, Sept 2013	#1- 8,454 hours/ 171% of LOP target #2- 517 people trained/ 226% of LOP target #3- One of three climate studies completed #4- LOP 172,379 HA/ 126% of original target

Government of Tanzania interviewees talked about the project’s impact. Among the comments were:

- iWASH has become an important player in national guidelines development, experimentation and promulgation of new watershed policies.

- The project helped collect important, in-depth data GoT procedures would not have been able to collect so efficiently.
- The project has contributed to the development of Water User Association guidelines, and Water Use Association experimentation.
- It has contributed to the learning curve in watershed management more cost-effectively than other national projects.
- Opportunities for GoT staff enrichment via secondment have been useful.
- Good experimentation in fostering sustainability through private sector development has taken place.
- Good GoT staff capacity development has taken place through workshops, technical studies and field research.

iWASH conceptualizes these interventions as directed to three goals: institutional capacity development, increased sustainable management of the watershed, and increased staff capacity to manage water resources.

Regarding institutional capacity development, in the Wami-Ruvu Basin the project assisted in geographic information system training to basin staff, helped develop a thematic water basin atlas, developed a rating curve study and provided national level recommendations on it, helped form and train Water User Associations, and assisted in water resource data collection. For the other eight basins, iWASH provided support to the Ministry developing and piloting a river classification system, trained basin community development officers in social assessment methods and developed and translated a social assessment manual, trained basin staff on data management and analysis, developed Environmental Flow Analysis (EFA) guidelines, developed materials to raise community awareness of the Water Resource Management Act, and carried out a global and climate change workshop.

Regarding increasing sustainable management of the watershed, the project has improved basin staff knowledge and information on water resources, conducted an Environmental Flow Assessment for the Wami River, completed a rapid Ruvu EFA for Kidunda Dam, and supported a Scope of Work for a Rufiji EFA. Additionally, the project carried out targeted studies which include sedimentation “fingerprint” studies on the Ruvu River, an aquatic biodiversity study on the Wami-Ruvu, a water quality study on the Ruvu, a Ruvu estuary study, a Ruvu socio-economic study, and climate vulnerability studies at Basin, catchment and community levels.

In increased staff capacity to manage water resources, the project carried out short training courses for Basin staff in water resource management principles, conducted joint interventions with basin water officers, and provided opportunities for various internships and secondments.

The project engaged in other activities too: piloting an integrated WASH/WRM approach in Mkondoa sub-basin including financing an innovative sub-basin workshop; active participation in sector working groups; governance training in water, sanitation and hygiene for civil society; carrying out fascinating oral histories in agricultural and pastoralist communities; conducting research on shallow well/ latrine contamination and low cost water quality testing; and carrying out a workshop on Community Owned Water Service Organizations. It is worth noting that the Rufiji Basin Office sensed it did not benefit from project support as much as others may have.

Many of these outputs are complex, in-depth, ecological and scientific studies, whose contribution to the “learning curve” of improved watershed management in Tanzania cannot be overstated.

Beyond this extensive list of outputs, ENVICON, a LNGO co-grantee, specializes in improved environmental management systems for industries. ENVICON works with industries recognized as heavy polluters: a sisal processor, an abattoir, a tannery and a textile mill. Its aim is to provide technical advice on management and engineering innovations so that the industries will realize it is in their own best interest to reduce their pollution "footprint." An interview was held with the ENVICON Director and staff and discussed a number of highly innovative concepts. Among these are industrial recycling of waste water, residual products converted to bio-gas production, ENVICON advocacy at national levels of stricter laws for environmental protection, and (paradoxically) the lowered expectation of such advocacy one must anticipate in a "low-enforcement environment" like Tanzania, and others. The ENVICON grant is funded under WADA II and demonstrates again the wide range of watershed concepts being fomented in the project.

Interviewees from the University of Dar es Salaam, another co-grantee, were enthusiastic about the collaboration between iWASH and their various departments in water resource management. They particularly cited iWASH's administrative flexibility and rapid response in: 1) support of four Environmental Flow Analyses (EFA); 2) EFA data acquisition and equipment purchases; 3) support to graduate students in environmental studies; 4) generalized water basin research; 5) financial support of various field study trips; 6) development of a basic water river classification system; and others.

Water Basin officials were appreciative of iWASH support, though perhaps because their list of desired activities is 50-items long, Basin Offices probably had hoped for more support than the project was able to provide. Notwithstanding, Basin and national Ministry of Water officials credit the project with responsiveness and a willingness to listen.

The ET assesses the overall impact of this IR has been substantial: the diversity and breadth of these studies and activities, and their contribution to the learning curve of improved watershed management is noteworthy. The ET echoes the opinion of the University professors these are exciting, important watershed development innovations with potential impact far beyond improved community service provision.

3.7 Summary of findings

Objectives in water have been achieved: seventy villages benefitted with 118,300 people with improved access to water, achieving 113% of target. Project reports estimate over 1,100 Rope Pumps installed. The quality of the water systems construction seen in the evaluation sample is not yet all one could hope for, (80% good or fair), but seems likely to improve if the project moves into a next phase. The 44% of the systems rated Good are quite good. Upkeep and maintenance figures are similar. This has brought enormous benefits to village women in particular; follow-on impacts in health and well-being are well attested.

Objectives in sanitation and hygiene promotion have been achieved: forty villages benefitted, 107% of the improved access target, 123% of the hygiene awareness target. The quality of sanitation construction is somewhat less than water, not because of lower overall percentages which are similar (72% good or fair) but because three systems are judged unacceptable by the evaluation team. Looking at community latrine upkeep and maintenance, 86% of these latrines are reasonably well maintained.

Table 4: Summary Findings of Infrastructure Quality and Maintenance

	Water				School latrines			
	Q (N = 25)	%	U/M (N = 26)		Q (N = 18)	%	U/M (N = 14)	%
Good	11	44%	10	38%	7	39%	6	43%
Fair	9	36%	10	38%	6	33%	6	43%
Poor	5	20%	6	23%	2	11%	2	14%

Unaccept.					3	17%		
-----------	--	--	--	--	---	-----	--	--

Objectives in private sector development regarding expanded supply of low-tech pumps have been exceeded throughout the project area. In Districts far from the project area the spread of the Rope Pump idea is advancing nicely and the project contributes meaningfully to national level considerations of the importance of low-tech pumps as a national priority.

Objectives in the development of credit mechanisms for WASH financing were not ambitious, a planning design borne out by project experience.

Objectives in watershed protection and management have been accomplished with a wealth of innovative activities, thoughtful and important research, and engaged participation in national and Basin fora.

4. PROJECT MANAGEMENT

The following observations are based on document review and evaluator experience managing projects similar to iWASH in many parts of the world.

Division of responsibilities

The project formulation was that Winrock would be primarily responsible for water and CARE for sanitation and hygiene. This “silo effect” is not particular to iWASH and characterizes project management through much of the developing world; sometimes it works well. In iWASH Tanzania (as in many other projects), field trip findings suggest it has resulted in activities that take place parallel to, but rather in isolation from, one another.

There are other ways of structuring complex projects. Some projects are designed where each executing partner is responsible for all project interventions in a given area. This gives the implementer a better chance of creating a more holistic perspective to the project, and improved program sequencing, from initial sanitation interventions, graduating to water interventions, graduating to MUS, graduating to watershed activities, for instance. This programmatic division of labor also gives the donor a way to evaluate the performance of each partner compared to the other. It appears this discussion has arisen from time to time during the project; it may be an idea worth re-consideration if a new project goes forward.⁶

CARE management

CARE International has been on a steep, two-year learning curve throughout the world with a new HQ-mandated web-based financial system. CARE Tanzania shared these growing pains; it was not able to report on or adequately monitor project expenditures for months. In December 2012, when partner agencies were independently audited, CARE’s budget execution showed substantial under-performance: one line-item of \$115,000 with expenses less than \$2000, two line items with a budget of \$67,500 with only \$2,500 spent; and more. iWASH senior management took the not ill-considered decision to allocate those funds elsewhere in the project. When CARE expenses were finally booked, it was seen the money had not been underspent; it was just slow in being recorded. The re-allocation of funds resulted in CARE’s being very short of funds for all of CY2013, taking budget-driven decisions the ET has questioned vigorously, Mnjillili in particular.

The CARE Audit dated December 2012 (reported received in June 2013) noted significant weaknesses in tracking project delivery to villages and the CARE audit is the only consortium partner audit not yet finalized.

⁶ Several project staff hoped the ET could comment on the learning curve of consortium interaction and evolution. As noted in Chapter Two, the FG methodology did not lend itself to such analysis.

Re-citing the finding in IR 2, based on two-of-three WADA systems of unacceptable quality and the third only fair, the evaluation teams judges CARE supervision of SWASH activities has substantially under-performed.

Gender

In the North, gender equity seems to have been adequately addressed. In a large number of gender Focus Groups (16 in the North, 170 participants), there were no significant differences of opinion between the women's groups and the larger community. Some women in these FGs contributed on their own initiative; when quieter ones were encouraged to comment, most did so thoughtfully. In addition to the gender focus group work, the ET Gender expert spent time in the iWASH office reviewing gender issues and reported that the project had managed gender integration appropriately. In the South (12 communities, 127 participants), project sensitivity to gender may not have been as successful. One reason might be that perhaps local NGOs in the South might be less sensitized to the extra work required to achieve gender equity compared to international NGOs in the North which have worked on gender equity for a decade. Another might be that the South, long considered more isolated than the North, may reflect traditional gender imbalances more. In any case, the ET judges gender has been successfully managed in the North, perhaps less so in the South.

Responding the gender questions in the SOW, the evaluation offers the following summaries:

- The project mitigated constraints to gender by keeping gender considerations in the forefront of project planning, by hiring gender-sensitive staff, by monitoring and reporting data segregated by gender, and by working with women in a substantial number of project activities: in water, sanitation, agriculture, VSL, pump maintenance (one example), and even Rope Pump manufacture (one example).
- Integrating gender considerations into activities is evidenced by ensuring female participation in village decision-making (site selection of DPs, for instance), and in women's participation in community leadership structures, COWSOs and others.
- Another way the project integrated gender findings into its activities was through a gender study conducted in August 2012. Women participate in most components of the project.
- Both sexes benefited from project activities. Since water collection is primarily the woman's role in rural Tanzania, it is possible to surmise the project has benefitted women more than men. See also comment about time-saving and impacts on health in IR #1.
- There were numerous FG reports of women and men participating fully in activities: women feeling fully involved in construction; carrying cement to the work site (sometimes climbing brutally steep hills); collecting sand, bricks, and aggregate; preparing food and fetching water to enable the work to continue. One clearly articulated benefit of this integration is that women feel strongly they are the "owners" of the project and that the project would not have come about had they not assumed that enhanced role.
- Improved status of women was seen when women's participation in many FGs was full and articulate, and in several communities it was clear women's opinions are now being listened to more.
- The project enhanced women's participation in project decision making: in siting of DPs, in the decision to move forward on the school sanitation and hygiene activities, in system operation and maintenance, and in VSL.

Working with local implementing partners and sub-contractors

Working with Local Implementing Partners and sub-contractors has proven challenging. As noted earlier, some have delivered high-quality products, others rather low-quality. The project shows evidence of supervision of these partners, and project records demonstrate having cancelled the contract of several sub-

contractors for under-performance. But field results suggest more supervision is desirable. In the likely event the donor continues to emphasize the importance of working through LIPs and sub-contractors, more budget for regular supervision and “mentoring” must be allocated, and the project may need to be make other adjustments to maintain quality standards.

IDYDC performance

In IR#1, the ET noted some concerns with IDYDC’s quality of construction. IDYDC reports only two staff assigned to implement the iWASH grant, perhaps not enough to provide adequate supervision, and one infers project management has been looking at IDYDC performance for some time. Staff suggests that assessment of IDYDC’s contribution should take into account other aspects of IDYDC performance: its (evidently satisfactory) Rope Pump and water filter promotion, training of well drilling teams, and drip irrigation promotion, among others. Earlier comments by IDYDC suggest a “pilot relationship” with iWASH and an 18 month learning curve—valid assertions, it seems.

On the other hand, recent project documents report that IDYDC is far behind in planned accomplishments of wells and beneficiaries; and ET findings show IDYDC performance is at the low end of the spectrum: in construction quality, one “Good,” one “Fair,” and three “Poor.” IDYDC takes pride in its operation and maintenance (O&M) training. Focus Groups and ET assessment, one “Fair” and four “Poor,” suggest that is not the case.

IDYDC loans the community 100% of the cost of the iWASH system, and then requires the community to repay the loan. One problem will likely be the perceived low-quality of the infrastructure: how feasible is it, one asks, to charge 100% of a Tsh. 1.5 million loan when well output is quite low at most of the five sites? One FG said it was going to stop repaying until the system was fixed. iWASH staff have reportedly suggested several times IDYDC might more appropriately charge a portion of the iWASH grant, perhaps, 50% of the value of the donation. This idea could use further study.

Overall, the ET judges the IDYDC relationship requires thoughtful reflection. If the decision is taken to continue with an IDYDC sub-grant, additional supervision should be planned to help this LIP perform to higher project standards.

MSABI and SHIPO innovation

One MSABI program innovation, a well insurance scheme called “Pump for Life,” is worth mentioning. Under this concept, MSABI guarantees it will maintain the distribution point for a lump sum payment of Tsh. 60,000 (US \$38) or Tsh. 6000 per month (US \$3.75.) This is an interesting solution to the Operations & Maintenance issue, offering to take O&M out of the hands of the community for a period of time in exchange for a fee-for-service to the NGO. MSABI suggests this stratagem extends the “transition period” into full community ownership, another promising concept. In the North where there is no viable LNGO, this is not a feasible option; but in areas where an LNGO has committed to long-term presence, it is an innovation worth further analysis.

SHIPO is a strong project performer and in whatever follow-on activities take place the iWASH/SHIPO relationship should continue and be further strengthened.

Organic growth

Project reporting says there is a growing demand for provision of water services and the project has taken a strategic decision to create a “demand approach” where it requires payment for water services from the community prior to starting work. This is a change from the early days when the project invested in project promotion and activities began before community contributions had been fully collected. This programming

adjustment will potentially enhance sustainability, and is also a more thoughtful “market-demand” posture. At this juncture, it is reported there are over 23 separate community demands for provision of water services, 18 of which have been visited, with an estimated cost of US \$2 million. None of these requests can be met.

Pending activities

With less than two months till the end of the project,⁷ there is a dauntingly large number of projects in execution. This means a lot of work must take place to fulfill project obligations.

- Finish all of Year IV communities, a half a dozen or so.
- Three Maasai communities that are sure to require extra time.
- Take a decision on and implement the Mvumi water tank upgrade (Appendix A).
- Take a budget decision to build a boys’ latrine in Mnjilili (Appendix A).
- Decide whether to annul the contracts of the LIPs which have built the three SWASH systems rated “unacceptable” by the ET and decide the project response to those situations. This evaluation recommends those project be completely re-done.
- Return to many SWASH communities to build adequate water tank lids.

Project reporting

iWASH external reporting is good. All quarterly reports have been reviewed and are comprehensive, coherent and concise. Backup documentation such as water quality files, GPS locating of water points and other such technical details are all good. Project documents in IR #5 are well written and informative, in spite of their technical complexity.

GoT key informants generally gave the project high marks on quality of collaboration and joint planning, joint problem solving, frequency and completeness of project reports, involvement of high-level GoT functionaries in local workshops, and keeping the GoT in the know regarding project activities. Several District representatives had project details at their fingertips.

5. CONCLUSIONS

The evaluation team’s response to the nine SOW questions are as follows:

5.1 How effective has the iWASH program approach been in reaching intended outcomes of the program in the key programming areas natural resources management, rural development, and water supply, sanitation and hygiene (WASH)?

The evaluation concludes that the iWASH program approach has been effective in achieving intended project outcomes.

- In natural resource management, innovative and scientifically important work has been done supporting improved Water Basin knowledge and management of the water resource—studies and activities well-informed interviewees say would not have taken place absent iWASH funding. The breadth and depth of those studies/activities is laudable and have been highlighted in the discussion of IR #5.
- In rural development, objectives have also been achieved though perhaps to a lesser degree. TAHA’s demonstration of a number of low-tech irrigation alternatives is impressive, along with its promotion of new crops, new market awareness, and the power of group activities. These are

⁷ At the time of final preparation of this Report, USAID indicated a two-year project extension is moving forward.

important and notable successes, but one concludes they are early steps in rural development uplift in project areas.

- Objectives in water supply have been accomplished in large measure and to reasonably high standards. Recall the full discussion of IR #1. Objectives in sanitation and hygiene have been accomplished to a lesser degree because three constructions are judged unacceptable by the ET and because of questions surrounding the impact of individual latrine promotion. See IR #2. Objectives in private sector water development have been well achieved. See IR #3.

5.2 What have been the strengths and/or weaknesses of the iWASH program approach (e.g. capacity development, service delivery)? How relevant are the program targets (e.g. coverage, geographic focus, target beneficiaries) and implementation approaches (e.g. capacity development, service delivery) in achieving intended results?

The project's balance between capacity development and service delivery has been good. If a project is overly construction focused, community capacity development does not take place, and the community is not trained to sustain the effort. If the project is overly "software" focused, it will accomplish relatively few tangible outputs. The project has kept a good balance, giving adequate attention and appropriate balance to the two.

Program targets are completely relevant and a good mixture. As one senior GoT official said (unprompted): "An effective development project must do two things: it must respond to Tanzania's need to improve our very low coverage of water and sanitation in rural areas and it must address broader watershed issues to protect the resource into the future. The Minister should be able to publicize increasing coverage because it is a national priority, and he must be concerned with the larger climate change/watershed issues at the same time." The ET agrees this is a nutshell summary of the strengths of the project.

Various project implementers report that iWASH has created a growing network of WASH service deliverers including local implementing partners. One staff reported that partners would probably agree "they have all benefitted from the regular interactions between each other and with iWASH... and it's been an interesting/constructive way of working helping to improve the long term performance of each of the partners." The ET did not ask this question specifically, thus does not offer an opinion.

5.3 Has gender been appropriately considered in the design and implementation of the program? Have both men and women benefitted and how? How effective is the program monitoring system and oversight, reporting and documentation?

Project planning paid careful attention to gender issues and reporting shows the project carefully distinguishes between male and female participation at many levels. Gender issues were kept at the forefront throughout project execution, and ET field travel assesses that gender was adequately addressed in the North, perhaps a little less thoroughly in the South. The ET's gender expert spent a day at the iWASH office reviewing project records and interviewing staff and came away pleased with how gender issues have been taken into account. For a more detailed discussion on gender, see the Gender section in Chapter 4. Also note the comment in Chapter 4 about the balance between female and male opinions expressed during the Focus Group discussions.

Project monitoring systems and oversight, reporting and documentation are generally strong (See 5.4 below).

5.4 How effective is the program monitoring systems and oversight, reporting and documentation? What are some identified key recommendations and lessons learned which could enhance project performance? Which approaches have the potential for being scaled up?

The ET attests that iWASH monitoring and reporting *of its own* activities meets the highest project standards. The ET is less convinced this is the case regarding the monitoring and supervision of Local Implementing Partners. The ET is cognizant the project has been supervising these entities on a regular basis (though how frequent that supervision is appears somewhat less clear). And it was noted that at least two sub-contractor contracts were annulled during the course of project implementation, a good decision. Nevertheless, the ET believes supervision has not been enough.

- Even strong implementing partners like SHIPO and MSABI benefit from thoughtful “accompaniment” and fresh perspectives. One field person offered that one reason gravity water systems are of high quality is not only that they were implemented by a quality contractor, SEMA, but also that iWASH engineers were frequently in the field interacting with SEMA staff.
- With IDYDC, the ET believes current monitoring has not been sufficient. This also appears to be the case with the sub-contractor CEMDO whose pace of construction in several SWASH projects has been slow. The ET also notes what it believes is the seriously underperformed sub-contracts with TCRS and RATIIS, both of whose contracts the ET recommends annulling.
- Perhaps there is a key Lesson Learned here. Where supervision has been frequent and on-the-ground, project performance has been quite good. Where either of those elements has been lacking, results are less satisfactory. One LIP partner suggests creation of a Quality Assurance cell within the project structure to give this idea more emphasis.

Scale up is addressed in Section 5.8.

5.5 What are the underlying key constraints/opportunities (internal/external) that have potentially impacted performance of the program (capacity, staffing, organizational support, etc.)?

The ET has not noted major internal constraints regarding iWASH capacity and staffing: iWASH personnel with which evaluators interacted are generally full professionals. However, the ET can sympathize with anecdotes that administrative procedures required by Florida International University such as levels of signatory authority seem ill-adapted to run a constantly evolving, multi-million dollar project. This is reiteration of a strong comment in the Mid-term evaluation. In addition, as noted in the Management section, CARE’s accounting weaknesses have negatively affected the project.

Southern LIPs make the case, and the ET has noted, that their programmatic capacity has extended the project reach in ways direct iWASH implementation could not have, extra “value for money.”

External factors that have positively impacted the project include strong support from senior Water Ministry staff in the capital. Frequent participation of senior iWASH staff in national working groups has also strengthened this relationship. iWASH is a well-respected interlocutor in national dialogues and working groups and, brings important field perspective to these deliberations. Perhaps the largest external factor that has negatively affected the project is the severe resource constraint faced by Water Basin Offices: there is really little money to go around for such a large mandate.

5.6 How cost effective is the program approach and implementation (e.g. management structure, resource distribution, funding streams)?

The project management structure did not receive in-depth study in this evaluation. Based on results, the ET forms the opinion the project was generally well staffed and appropriately structured.

From December 2012 partner audits, the ET judges the funding streams for this project must have caused considerable management difficulties. The primary grant funding was USAID/Tanzania's Water for the Poor funding, \$12.6 Million. To this was added a supplemental grant of \$150,000 from the USAID Biodiversity Fund and nearly \$300,000 from the Climate Change Fund in support of IR #5. To this was added WADA II/GEFT funding of over \$1.8 Million and special reporting to WADA II and to Coca Cola. Some of these funds could support MUS activities, others could not. Some financed IR #5 studies, others not. Keeping track of each of these funding streams and their different reporting requirements—to say nothing of the comments above on FIU financial requirements and CARE's finance monitoring difficulties—must have made this a very challenging project to stay on top of.

5.7 How adaptive is the current program approach in meeting program priorities? What are some identified key recommendations and lessons learned which could enhance program performance?

The ET forms the impression the project adapted well to new situations, and senior managers and GoT staff talk about iWASH as a learning project. Review of project records and field travel demonstrate that early missteps have been corrected (over-building in Makuyu for example) and the project is learning as it goes in many other areas.

Another adjustment is the increase in watershed studies and activities that came about as a result of additional funding to IR #5. The project made good use of this additional funding in expanding the scope of various EFA studies as described in Section 3.5.

A third successful adjustment is helping the GoT study how to engage at the sub-basin level. This is a new concept that grew out of a Mid-term evaluation recommendation and GoT decisions and one which will require considerable experimentation as it goes forward.

Lessons learned and recommendations will be discussed in the following chapter.

5.8 Based on the recommendation from the mid-term evaluation of 2011, how successful has the program been in starting to scale up approaches (H/H WASH, service delivery, water management, and water productivity) and what are the opportunities/ challenges for further scaling up?

As an outgrowth of the Mid-term evaluation, the project made a number of changes in methodology directed to scale-up. The first is the move in Year II into the South, and the decision to implement exclusively through LIPs there. As discussed, the project is also moving toward a "demand driven" response—that is, working with communities that are most ready for the project and willing to up-front their financial contributions. A third element is expansion of the Rope Pump technology to other parts of the country through training to non-project area artisans and through the entrepreneurship of project-area artisans seeking larger markets. A fourth is the training courses and support offered to Water Basin Offices in the other basins in the country. Opportunities and challenges for further scaling up are "more of the same," with not nearly enough money for so many priority activities.

5.9 How sustainable is the current iWASH approach in terms of service delivery, water resource management, and WASH?

The evaluation team believes the project is building sustainability in numerous ways.

- An essential aspect of rural water system sustainability is community tariffs and the project has had some success promoting the concept. Appendix A shows four of eight water communities in the North collecting tariffs. In the South, only four of eighteen were seen doing so (or they have contracted with MSABI for the service.) Thus though some success is taking place, more work clearly seems appropriate.

- The ability of communities to repair the Rope Pump is another major contributor to sustainability. In one community, the Rope Pump had been repaired by the school children the day before the ET visit without difficulty; in numerous other communities, FG reports mentioned Rope Pump repair as routine. This is an inherent strength of the Rope Pump technology and a clear project win. Makuyu shows that sometimes the concept turns out negatively, but overall the project is achieving sustainable water system delivery. If as suggested by the Mid-term, the project broadens its technology “menu” to other pump options, it will surely do so with easy community repair clearly in mind.
- Another important component of water system sustainability may be the creation and strengthening of COWSOs, (though this opinion is not necessarily shared by all project partners). Project staff and GoT officials recognize this is a work-in-progress, and there are many obstacles that iWASH is working on, such as the legal structure of the entity, and the ratification by the larger community of the COWSO role, among others. District water officials lament that the new mandate has been handed down without the resources to implement it. In sum, one assesses good initial work is being done, but as with most rural water systems throughout the world, there are yet years of work before full community ownership will be achieved in rural Tanzania.
- In school latrines, iWASH has been instrumental in creating (or strengthening) parent/ teacher school committees to help maintain the latrines. Some communities have established a tariff to defer the cost of latrine upkeep. Given that sanitation is far down on the list of community priorities, this is quite an encouraging development. As in the water component, it is likely more emphasis and more project accountability is appropriate.
- The sustainability of Rope Pump-as-a-business has been noted and is worth emphasizing. Over eleven hundred pumps have been sold — almost half of them via the private sector — manufactured to a common standard and sold at competitive market prices. The ET assesses the Rope Pump business is up and running and could become self-sustaining almost at any moment, which assertion does not mean project support should be withdrawn. Another year or two of project involvement would help solidify these gains: by training more manufactures in non-project areas; by financing innovative ‘sunken-cost’ promotion campaigns; by TV advertising; by designing a sturdier, larger volume pump model; by continuing to promote the technology in national fora (where sometimes resistance to the low technology alternative can be expected.) Rope Pumps appear to be on the cusp of breaking through to national importance, something iWASH has played a large part in orchestrating, and a year or two more of continued support could make a big difference.
- Another powerful commentary on sustainability comes from two District authorities who (separately and in unsolicited fashion) commented: “The most important thing we have learned from iWASH—a concept that should be given national importance and have national implication—is that communities become better owners of their system when they have to co-share in its costs. In the past, the Government built things only with GoT funds. A better way is to insist that some costs are co-shared by the community. This new understanding is the biggest legacy of iWASH.”

There is a slightly different question to be asked: how sustainable is the iWASH project *approach*? That is: how well-founded is the mix of water, sanitation and hygiene, private sector development, private sector financing, and watershed interventions? One key informant’s response mentioned above bears repeating: an effective development project must respond to Tanzania’s need to improve low coverage rates of water and sanitation in rural areas *and* it must address broader watershed issues to protect the resource into the future. The iWASH project satisfies these two demands well. IR #1 shows over 118,000 people benefited by improved access to water; IR #2 shows almost 26,000 people with improved access to sanitation and 164,000 with improved awareness of sanitation and hygiene issues. IR #3 shows good movement toward

the creation of a dynamic private sector to manufacture low-tech pumps; and IR #5 shows a dramatic improvement in the “learning curve” of watershed science and watershed protection. Only in IR #4 has the project not achieved significantly, one surmises, not because the concept of private financing was erroneously included in the project mix, but because appropriate mechanisms to do so have not yet been discovered.

Finally, one asks the question about an exit strategy. If a talked-about project extension takes place, what should the project work on over the next several years so that hard-won gains are not lost? Answer to this question forms part of the next chapter’s recommendations, but some ideas can be advanced.

- The project should continue much as it is currently structured: with a good mix of improved services in water, sanitation and hygiene, and a good number of watershed activities. iWASH is going well; it should continue much as it is.
- The mix of project-run and LIP-run activities should continue.
- The project’s emphasis on the “demand driven” approach should continue. This is an evolution of project concept that should go forward into the future.
- Agricultural production should receive more project emphasis, as a generator of resources to pay for improved water and sanitation, and to avoid unsustainable downstream exploitation that would exacerbate poor upstream watershed management. “Appropriate exploitation” of water must be linked to improvement in current production and long-term sustainability of the resource.
- Continued emphasis should be given to private sector development.
- The project should assume a role to re-visit previously built systems regularly to learn more about “post-project” issues. The process of community graduation to complete independence could also be re-conceptualized as a *several-year* process rather than primarily a one-off inauguration event.
- Project experimentation and innovation should continue in developing private sector financing, this would include continued exploration of leveraging other sources of financing to expand water and sanitation coverage.

6. LESSONS LEARNED and RECOMMENDATIONS

The following is a list of lessons learned and recommendations.

6.1 At the consortium level

- Consider carefully the idea, which has been raised in the past, of dividing up program responsibilities more holistically: one implementing partner assuming responsibility for all program components in a given area. Using this improved holistic vision would strengthen the interaction between community service activities and community involvement in watershed management issues. However, this may be too broad of a structural change in the program to be instituted through an extension period.
- Get potential consortium members to take a hard look at their “real interests.” Some international NGOs are moving away from service delivery into women’s and community empowerment. Ask consortium partners whether they really want to be involved in such a supervision-intensive/ service delivery project.

6.2 At conceptual level

- At the conceptual level, the current project has developed a good balance between watershed protection and increased coverage which should continue. Paradoxically, echoing the Mid-term

evaluation this document also judges that somewhat more resources should be assigned to watershed activities than in current grants: there is so much to do, and so little money to do it.

- Also at the project and conceptual level, the “program weight” of water system construction, its importance, and its budget should continue at iWASH levels.
- Continued emphasis and resources should be invested in school latrine construction and hygiene education. The ET judges the need is so vast, this activity must continue. Money invested in the promotion of *individual* latrines could perhaps be rethought. Though the concepts are important and the economic loss to Tanzania is enormous, with so many other competing priorities, current results may not justify the investment.
- Market development of Rope Pumps (and others) should continue at iWASH funding levels. Echoing a recommendation from the Mid-term, the project could broaden its technology “menu” by moving into sturdier pumps, if at all possible with the same market-development strategy that iWASH created with the Rope Pump. SHIPO (or another LIP) could begin design experiments to see how the Rope Pump could be adapted to respond better to the demands of heavier concentrations of population.
- MUS concepts should continue to be promoted. More resources should go to agricultural promotion in more communities than just a handful. More resources should also be devoted to foot pump irrigation demonstration (and sale), drip irrigation demonstration (and sale), and other productive low-tech agricultural investments.
- Continue uninterruptedly to avail of the expertise of quality Local Implementing Partners, perhaps at somewhat expanded resource level.
- The VSL component could be dropped or receive less emphasis. It does not appear essential to the project concept and has not proven dramatically successful at least as presently conceptualized.
- The project could weigh the benefits of a subcontract with an NGO specialized in hygiene and sanitation promotion, rather than assuming that various sub-contractors will have adequate expertise in this area.
- As called for in the Mid-term evaluation and as the project reports it has tried to achieve for 18 months, the project should sign a formal Memorandum of Understanding with Basin Offices to help clarify objectives and expectations.

6.3 At operational level

- Take into account the downside risks of continuing the relationship with probable low-performing LIPs and sub-contractors. Provide more supervision and standards to local artisans (*“fundis”*) who are generally hired to build the structures.
- Carefully build into a project continuation more frequent, more “tough love” supervision. Make it mentoring as well as “performance driven” supervision. Make it a shared learning experience.
- Consider creating a Quality Assurance Unit within the project, perhaps composed of iWASH and high-quality LIP staff to promote higher overall construction quality throughout the project.
- Return to previous years’ water villages presenting a “demand driven” concept of pump site expansion and see what results. Additionally, create a staff position with specific responsibility to visit pump sites with COWSO members and evaluate how the pumps perform over the long term.
- Continue to invest resources in system rehabilitation, being careful not to undercut the community’s O&M responsibilities (of the older system.) Insist that the offer be contingent on the community’s establishing a meaningful tariff structure.
- Continue project outreach and system construction to pastoralist communities.
- Continue the emphasis of working with COWSOs, recognizing that it will be slow work.

- Continue operational research grants with LIPs such as SHIPO and MSABI.
- Strengthen the villagers' awareness of project costs by copying them on delivery documents, and prepare official Acts of Delivery at the conclusion of construction.
- Continue "one-off" research studies on impact, climate change, and long-term village memories.
- Carry out a one-off study to see how much girls' school attendance may have changed after the latrines have been built. Investigate further reports of decreased adolescent pregnancies.
- Adjust the project to technical suggestions offered in Appendix A and E.
- Study the possibility of a one-off grant of per-diem for energetic entrepreneurs to a given village on Rope-Pump promotion.
- Consider a TV advertising campaign for Rope Pumps to give wider, "societal" exposure to the technology.

6.4 Concluding comment

In broad terms, the overall recommendation is that the overall approach being employed to deliver services and meet the goals of iWASH impact is working effectively and the project is accomplishing important objectives and should be retained going forward.