STANDARDS ALLIANCE: PHASE 2 CWSC FINAL REPORT

PROGRAM OVERVIEW/SUMMARY

Program Name:	Standards Alliance: Phase 2
Activity Start Date and End Date:	May 2021- March 2024
Name of Prime Implementing Partner:	American National Standards Institute (ANSI)
Agreement Number:	#7200AA19CA00012
Name of Subcontractor/Sub awardee:	The Center for Water Security and Cooperation
Geographic Coverage (cities and or countries)	Ghana, Uganda, Zambia

1.1 Program Introduction

The Center for Water Security and Cooperation (CWSC) and the International Association of Plumbing and Mechanical Officials (IAPMO), as part of the Standards Alliance: Phase 2, implemented the "Plumbing the Legal Depths" project in Ghana, Uganda, and Zambia. This activity performed a diagnostic of the existing legal, policy and institutional frameworks governing National Quality Infrastructure (NQI) related to the water, sanitation, and hygiene (WASH) sector. These diagnostics assessed the enabling environment to increase access to drinking water and sanitation, support the adoption and application of international WASH standards, and enable the removal of WASH barriers to trade in WASH to facilitate market access in the partner countries. Country-level reports and a comprehensive trend report were developed where legal gaps and shortcomings were identified. Recommendations were also made on how these gaps can be addressed by aligning domestic policies with international standards and best practices. The findings and recommendations were disseminated widely with stakeholders and concluded with a virtual workshop.

The activity aimed to demonstrate whether or not the existing legal frameworks and standards were sufficient to ensure and enable universal access to safe and affordable drinking water and sanitation services. CWSC and IAPMO were expected to: (1) analyze and evaluate existing national laws to determine whether or not they create an actionable mandate for guaranteeing access to water and sanitation services for the population, and (2) analyze and evaluate existing WASH standards to determine whether they adequately ensure safe, reliable, and consistent WASH products and services.

The project was a success. CWSC and IAPMO were able to comprehensively answer the research questions by examining the written national laws according to CWSC's proprietary methodology. The CWSC determined that the existing law is insufficient to create an actionable mandate for achieving

universal access to drinking water and sanitation services in Ghana, Uganda, and Zambia. The CWSC also conducted several interviews to identify additional laws that should be reviewed and how the law is actually practiced. Further, a review of the most current lists of active voluntary and compulsory standards was completed to determine how comprehensively existing standards address the safety and reliability of WASH products and services, like faucets and toilets. This type of work serves as a stock-taking, a diagnostic of what exists to identify gaps and shortcomings and identify where further action is necessary. This kind of diagnostic can serve as the foundation for our organizations and others (including civil society groups, governments, and organizations) to determine next steps for how to address the shortcomings and gaps that have been identified, ensuring that further activities are responsive to real, identified needs. In the Trend Report, and during the webinar, CWSC and IAPMO provide recommendations for how to address those gaps in order to improve the WASH National Quality Infrastructure.

2. ACTIVITY FINAL REPORT

2.1 Project Narrative

This project was born out of a recognized industry gap regarding (1) inadequate WASH law frameworks to create an actionable mandate for achieving universal access to drinking water and sanitation services and (2) insufficient WASH standards to ensure that WASH products and standards guarantee safe, reliable, and consistent drinking water and sanitation products and services. CWSC and IAPMO have worked in many countries and seen how, sometimes, countries' WASH laws and standards may be insufficient to ensure universal access. Understanding the gaps and shortcomings in existing laws and standards is the first step to developing a responsive strategy.

This project was conducted in four phases: deskwork, fieldwork (virtual interviews), report drafting, and a virtual workshop. As is the nature of research and interviews, the first three phases intertwined throughout the project. Deskwork was conducted based on CWSC's WASH law methodology and IAPMO's WASH standards methodology. In the fieldwork stage, CWSC identified a wide range of governmental and nongovernmental stakeholders to interview in consultation with IAPMO and ANSI. Governmental stakeholders were typically involved in implementing and enforcing the law, including developing regulations, policies, and plans, whereas the nongovernmental stakeholders worked on issues related to the provision of drinking water and sanitation services. Throughout the interview process, CWSC continued to research and verify findings. Deskwork and fieldwork provided the backbone for the country-level report diagnostics, which became the annex to the Trend Report. Ultimately, the data and information were included in the Trend Report to provide clear findings and recommendations.

To support this project, initial conversations with USAID Missions in Ghana, Uganda, and Zambia were completed in Q4 2021 and country-level outreach began concurrently. CWSC/ANSI shared information with the Missions periodically and as requested throughout the project to ensure coordination with USG on the ground.

The CWSC began the project by conducting deskwork and concurrently developing a robust list of research questions (listed in the Annex). One purpose of the interview questions was to identify whether there were any laws or documents to review that did not show up in the deskwork phase of the project. This information was needed to better understand the potential impact of the law on the sector and provision of water and sanitation services. Additionally, as it was difficult to find information about standards and the internal processes online, questions aimed to uncover details of the standards setting process in each country including process for developing and adopting standards were included, as well as questions on how standards were adopted.

The deskwork research review included a deep analysis of more than 100 documents, articles, and websites, ranging from national laws and national standards to articles and reports in Ghana, Uganda, and Zambia. Laws and standards are primary documents, while articles and reports are secondary documents. The articles and reports helped to provide an initial perspective on the landscape of laws, standards, and challenges. The CWSC focused its examination on the national laws primarily responsible for governing the provision of drinking water and sanitation services, including the following laws if they existed: water law, environmental law, drinking water and sanitation law, public health law, local government law, and the Constitution. The Constitution is responsible for establishing the basic structure of governance and for dividing roles and responsibilities between the national and local government. The laws govern the provision of services, the protection of the source waters for drinking water, and provide greater detail about the role of local government. The laws state the rules, rights, responsibilities, and institutions related to drinking water and sanitation. It is these rules, rights, and institutions which indicate the existence and strength of commitment to achieving universal access to water and sanitation and the development of standards. In some instances, related policies or plans linked to the laws were also reviewed. However, those plans and policies do not provide enforceable commitments; therefore, they did not provide insight into what the mandate is for providing drinking water and sanitation services.

Throughout the deskwork research phase, the CWSC developed an outline and format for the country-level report which was largely based on the diagnostic tool previously developed by CWSC. The country-level report outline contributed to additional opportunities to analyze the data and information collected through the diagnostic tool. Each country-level report was added to the Annex of the Trend Report.

In preparation of the fieldwork phase, between Q4 2021 and Q3 2022, CWSC developed lists of interviewees for each country and conducted outreach to colleagues who may have additional stakeholder recommendations. The CWSC entered this project with experience in Zambia from prior work to better understand the laws governing water security across ten different nexuses, including the provision of drinking water and sanitation services, protection and management of natural resources and services. This background assisted stakeholder identification in Zambia. A list of interviewees is included in section 2.1.1.

In Q4 2022, outreach began to schedule interviews. Fieldwork primarily conducted online, with a total of 15 interviews completed: 5 interviews in Ghana, 6 interviews in Uganda, and 6 interviews in Zambia.

After the completion of the interviews, relevant findings and information were incorporated into the country-level reports. For each country, the CWSC applied a modification of its proprietary methodology developed to determine whether existing laws advance water security. The original methodology, used to examine laws across ten (10) nexuses, is a comprehensive examination of whether the sufficient rules, rights, protections, prohibitions, processes, and institutions are in place to achieve water security. The modified methodology used identifies what the CWSC expects to find in a country's law in order to realize the human rights to water and sanitation. It identified 16 different types of provisions it expects to find in a law that creates the enabling environment to achieve access to water and sanitation. For each provision, the CWSC determines whether or not the existing law is sufficient, concluding: (1) Yes, (2) Partially, or (3) No. The CWSC also included a detailed analysis of how that conclusion was reached. For further information, please review the Trend Report Annex I. The Annex is included as an additional resource to help support future decision making in each country.

Some of the research findings required CWSC to follow up with stakeholders to gain additional information. Throughout the process of preparing the country-level reports and Trend Report, IAPMO and ANSI reviewed drafts. IAPMO provided strategic guidance based on their needs and interests,

including providing their own methodology for analyzing the sufficiency of WASH standards.

Together, deskwork and fieldwork contributed to the three country-level reports which were delivered to ANSI in June 2023. These reports continued to be refined as a result of the Trend Report and the final versions are included as annexes in the Trend Report. The country-level reports were also shared with USAID Mission offices in Ghana, Uganda, and Zambia for review and feedback.

Following the completion of the country-level reports, the CWSC prepared the Trend Report, which identified several findings based on similarities and differences between the laws and standards of target countries. Ultimately, the research revealed several gaps within WASH laws and standards that suggest opportunities for improvement in the three countries. Two findings in particular demonstrate gaps in countries' commitments to WASH: First, neither the Constitution nor any other law in Ghana, Uganda, or Zambia establish human rights to water and sanitation. Second, limited WASH standards have been adopted to assure that WASH products and services are safe and reliable, and even fewer are compulsory. These gaps present key opportunities for strengthening the sector, and the report offers suggestions for how WASH laws can be enhanced. Countries can recommit to improving access to water and sanitation by establishing meaningful, tangible human rights to water within their Constitution or water law. They could also require the adoption of compulsory WASH standards to govern plumbing fittings and fixtures, piping, and water quality and water treatment technologies.

A Trend Report Webinar was hosted virtually, by CWSC, IAPMO, and ANSI on February 21, 2024. The CWSC hosted one combined workshop for the release of the Trend Report rather than two workshops per country based on stakeholder feedback and experience gained over the course of the project. As the Trend Report serves as the published document of this project and the country comparison is an important feature of that report, it was essential to develop a collaborative workshop space that included representatives from all three countries. While each country is a sovereign nation with its only legal and institutional frameworks, cross-country discussion and collaboration should be encouraged to help identify different successful options to creating a strong NQI WASH. The webinar included stakeholders who were interviewed and additional contacts which were gained over the course of the project. USAID and the USAID Missions were invited to join. About 70 people registered, and just over 30 participated in the live webinar.

The webinar and trend report were published on the <u>Standards Alliance: Phase 2 website</u> and shared widely through email and other platforms (e.g., LinkedIn).

2.1.1 Stakeholders

CWSC interviewed a wide range of governmental and nongovernmental stakeholders from its own experience and by leveraging organizational contacts such as Sanitation and Water for All (SWA), SuSaNa and Agenda for Change to help identify additional contacts. Below are the individuals with whom CWSC conducted interviews.

GHANA

STAKEHOLDER CATEGORY	STAKEHOLDER	NAME		
Nongovernmental	SWA	Kevin Roussel		
Nongovernmental	CRS	Caroline Raes, Emmanuel		
		Kogo, Laari Chimba		
Nongovernmental	USAID	John Nedjoh		
Governmental	Ghana Standards Authority	Becca Oppong, Williams		
		Nimako		
Governmental	USAID Mission	Ryan Mahoney, Emmanuel		
		Odotei		

UGANDA

STAKEHOLDER CATEGORY	STAKEHOLDER	NAME		
Nongovernmental	SNV	Kumbulani Ndlovu (in		
		Zimbabwe), John (JR) Okello		
		(in Uganda)		
Nongovernmental	IRC	Turimaso Wilbrord (WASH		
		Program Coordinator), Moses		
		Asiimwe		
Governmental	Ministry of Health	n Dr. Herbert Nabaasa		
	Commissioner, Health Services			
	(Environmental Health)			
Nongovernmental	Lifewater International	Spera Atuhairwe		
Governmental	Uganda National Bureau of	Emmanuel Tumwesigye,		
	Standards	James Aracha		
Governmental	USAID Mission	Margaret McMorrow, Juliet		
		Mwebesa		

ZAMBIA

STAKEHOLDER CATEGORY	STAKEHOLDER	NAME		
Governmental	Zambia Compulsory Standards	Francis Mwelwa (in Lusaka;		
	Body	Inspections Manager), Theresa		
		Chibesa Captula (in Ndola;		
		inspections manager),		
		Chishimba Lombe, Kasuba		
		Kasengele		
Governmental	ZABS	Brian Mweemba, Belinda		
		Kancheya		
Governmental	USAID Mission	Mundia Matongo		
Nongovernmental	Moses Chongo			

Results

There were several important results from this work:

(1) This research created a detailed collection of data and information on Ghana, Uganda, and Zambia's commitment to WASH NQI that did not exist before, increasing transparency and understanding of the relevant laws, standards, and institutions.

The country-level reports include comprehensive data and information on the laws and standards governing NQI WASH. This information, in its completeness, cannot be found elsewhere, and is organized in a useful, research-based way with citations to the source documents. Without this report, stakeholders would have to review multiple documents to find answers to their questions. This report also identifies what is important when trying to determine whether there is an enabling environment supporting of NQI WASH. Having that framework for thinking about NQI WASH will help other stakeholders to better understand the enabling environment that exists in their country. Therefore, this report not only enables critical thinking about NQI within Ghana, Uganda, and Zambia, but also in other countries.

(2) The Report sets forth specific, research-based findings and recommendations that help to demonstrate that there is a lot of work to be done to create the supportive enabling environment necessary to ensure a strong WASH NQI.

The findings and conclusions presented in the Trend Report are founded in desk research and fieldwork. They demonstrate that there are small bits and pieces within the law that are starting to create the necessary foundation, but that there are significant opportunities to improve the laws to create a meaningful, measurable commitment to achieving access to drinking water and sanitation and to adopting compulsory WASH standards that will ensure safe, reliable WASH products. As mentioned before, this Report demonstrates where the challenges, weaknesses, and strengths are in Ghana, Uganda, and Zambia, which will enable and encourage future conversations about how to improve and strengthen NQI WASH.

(3) The Report creates a foundation for governmental and nongovernmental stakeholders to dialogue about these issues and take action.

The Trend Report creates visibility around the topic of NQI WASH and the gaps in the laws and standards for ensuring safe, reliable access to drinking water and sanitation for all. With this data and information, governmental and nongovernmental (such as WASH product companies) stakeholders can (a) better understand the challenges and gaps, and (b) make informed decisions about how to address those gaps and challenges. They will not have to do the legwork around understanding the relevant laws and standards and their gaps and shortcomings, and will rather be able to focus on goal setting and developing solutions to meet those goals.

(4) The webinar launching the Trend Report created a space to discuss these issues.

The webinar served as not only a venue to present the findings and conclusions from the report, but also to create a space for discussion. CWSC and IAPMO discussed the findings in a conversation format, and then opened the discussion to attendees who asked questions through the chat and Q&A feature. Creating the space to learn and ask questions is critical to advancing progress and change in the sector.

2.2 Implementation Status

Activity #3 - Research on WASH-related product standards and their reference in law, regulation, and policy

The CWSC's activity completion dates are included below.

Activity	Activity Description	Completion Quarter
Activity #3.1	Conduct deskwork to gather information about relevant laws, regulations, policies and standards in target countries from online sources and CWSC's network of contacts	Quarter 4 2022
Activity #3.2	Conduct in-person or virtual interviews with Ministries, regulators, National Standards Bodies, utilities, private sector partners and civil society organizations	Quarter 4 2023

Activity #3.3	Incorporate findings from	Quarter 1 2024
	deskwork and interviews into	
	comprehensive country-level	
	reports	

3. IMPLEMENTATION CHALLENGES

The CWSC faced difficulties engaging with stakeholders virtually during the initial years of the COVID-19 pandemic when energies and attention were placed on more pressing issues. Despite the CWSC conducting fewer interviews than anticipated, a comprehensive amount of information was collected and analyzed to confidently complete the reports. CWSC consistently adapted to this challenge by revisiting stakeholder lists and identifying new stakeholders in consultation with IAPMO and ANSI. For this project, a future in-person element to discuss the report with governmental and nongovernmental stakeholders in each country to identify next steps could go a long way to engage stakeholders and facilitate action.

The CWSC also made two important changes to the research and presentation approaches. First, the CWSC ultimately concluded that answering Research Questions (RQ) #1 and #2 fully captured the relationship between WASH law and NQI in the WASH sector as anticipated; for details on all RQs the reader may refer to the attached annex. RQ#3 was included as a catchall in the event that fieldwork identified other laws or practices not set forth in the priority national laws that impact NQI WASH. However, through fieldwork, no additional or unique limitations were shared. Additionally, RQ#4 regarding workforce development was difficult to address. Although there was some important feedback shared via the Plumbers Association of Zambia, the CWSC was unable to identify similar groups in Ghana and Uganda after conducting extensive online research and outreach to colleagues. These types of groups could serve as important advocates for the development and implementation of more WASH standards and this could be an area of development for future research. Despite this, the CWSC is confident that the Trend Report comprehensively addresses how law governs WASH NQI in all three countries.

4. WORKSHOPS AND TRAININGS CONDUCTED

Activ #	ity	Country	Training/ Workshop	Date	Number of registrants	Number of Participants	In person / Virtual/ Hybrid
3		Ghana, Uganda, & Zambia	Plumbing the Legal Depths Trend Report Webinar	February 21, 2024	60	32	Virtual

5. PERFORMANCE INDICATORS

In addition, to the ANSI indicators (included below), CWSC identified the following performance indicators:

Performance Indicators	Outcomes	Results	
Access to information about the role of law in improving NQI as measured through the publication and widespread dissemination of the three (3) Country Level Reports and the Trend Report using our network of contacts in the WASH sector. We would seek to maximize the number of people who receive the report by sharing it with organizations that have large WASH stakeholder audiences. We will also ask stakeholders through our fieldwork about the availability and accessibility of information on law and policy and use this information to inform to whom we share the Reports and how we report the information in the Reports.	Increased understanding and greater transparency of the legal framework and institutions governing the improvement of National Quality Infrastructure and the laws enabling or hindering trade in WASH products.	widespread dissemination of the Trend Report significantly contributed to enhancing access to information regarding the role of law in improving NQI. The CWSC has ensured broad dissemination of the Report through hosting the webinar, releasing the Report on ansi.org and including the Report and webinar recording on standardsalliance.org, and sharing the Report with contacts through email and via LinkedIn. The CWSC utilized its network as well as that of ANSI and IAPMO to increase visibility of the report. Feedback from stakeholders indicates that stakeholders have found the information contained within the reports to be valuable and accessible.	
Greater and more widespread knowledge of the role of law in improving NQI as measured through the hosting of education and engagement sessions and the number and diversity of stakeholders who participate. Because the sessions will be virtual, we expect more people can participate from within and outside of Ghana, Uganda, and Zambia thereby	Increased understanding and recognition of the role that law and policy play in improving NQI and the need for reform in order to create a stronger marketplace for WASH products and to increase consumer confidence in WASH products.	Education and engagement existed throughout this process as CWSC, ANSI, and IAPMO worked together; as the CWSC interviewed and sought feedback from stakeholders; and when the CWSC hosted the workshop to discuss the	

amplifying the number of people both learning about our findings and conclusions as well as the number of people engaging in discussions about what next steps might look like based on those findings and conclusions. To track this, we will also conduct a baseline, preeducation and engagement session survey and a post-session survey to gauge the change in session attendees' understanding and knowledge of NQI WASH law. We will also use that information to identify future audiences and to improve the sessions.

results of this work. As part of the webinar registration, CWSC asked a question to better understand how well people understand the law? The question asked: "One a scale of 1 to 5, with 5 being expert and 1 being novice, how well do you know and understand the water and sanitation laws in your country?" The average response was 3. We did not include a way to verify attendee's actual knowledge and understanding of the law, but provided a baseline to understand how comfortable stakeholders were with the topic.

ANSI Indicators

	Indicator	FY 2023 (Year 4)	FY 2023 (Year 4)	FY 2024 (Year 5)		
IR 1.1: Countries have knowledge about the value of using their national quality infrastructure.						
2	Number of trainings conducted about the value of using their national quality infrastructure.	Q3 2022: 0 Q4 2022: 0 Q1 2023: 0 Q2 2023: 0 Q3 2023: 0 Q4 2023: 1 Q1 2024: 1	Q3 2022:0 Q4 2022:0 Q1 2023:0 Q2 2023:0 Q3 2023: 0 Q4 2023: 0* Q1 2024: 1			
4	Number of international standards adopted or referenced by partner country.	0	Score 4 (0 achieved)	0		
IR 1.2: Countries have an enabling environment						
5	Countries have an enabling environment for a national quality infrastructure.	0	Score 4 (0 achieved)	0		

*PI2: The CWSC anticipated 1 workshop in Q4 2023. This target was not met as CWSC noted in early Q4 2023 that the December-January holiday/festive period in the target countries conflicted with webinar dates. Therefore, the date was moved to accommodate the local holiday schedules and to maximize participation.

PI4: The CWSC met the target of 0, as the reports released are not directly related to immediate standard adoptions. The CWSC report was released at the end of this project and therefore the full impact of the research and recommendations outlined in the Trend Report will only be realized in future years, which explains the target of 0 at the end of implementation. The CWSC hopes that relevant WASH stakeholders and decisionmakers in Ghana, Uganda, and Zambia will incorporate the Trend Report recommendations into national standard body work plans. For Year 6 and beyond, the CWSC anticipates that there will be continued engagement with CWSC's country-level and trend report amongst stakeholders, leading to partial success, as international, regional, or national standards are adopted to support a strong WASH sector as outlined in the Trend Report, at which point the target could then be 1 for this indicator.

PI5: The CWSC met the target of 0, as the reports released are not directly related to immediate impact on regulations. The CWSC report was released at the end of this project and therefore the full impact of the research and recommendations outlined in the Trend Report will only be realized in future years, which explains the target of 0 at the end of implementation. The CWSC hopes that relevant WASH stakeholders and decisionmakers in Ghana, Uganda, and Zambia will incorporate the Trend Report recommendations into policy directives and national standard body work plans. For Year 6 and beyond, the CWSC anticipates that there will be continued engagement with CWSC's country-level and trend report amongst stakeholders, leading to partial success, as WASH policies in each target country are developed, implemented, and potentially enforced, at which point the target could then be 1 for this indicator.

6. CONTRACTUAL & ADMINISTRATIVE UPDATE

The CWSC requested an administrative update to extend the project to Q1 2024. The extension facilitated the completion of the interviews to ensure that all stakeholders had sufficient time to respond to questions and follow up. As the reports were drafted, further follow-up interviews were also conducted. Additionally, the extension allowed the CWSC to collaborate more closely with IAPMO to determine research gaps and facilitate additional interviews with IAPMO's contacts. It also enabled the CWSC to collaborate more closely with IAPMO in analyzing the results of deskwork and fieldwork together.

Annex: Research Questions

The CWSC developed the following questions to guide the research and the stakeholder interviews. The first question is the main research question, and the additional questions noted as bullet points are intended to help answer the main research question.

Q #1: Has national-level law created a commitment to increasing access to drinking water and sanitation?

- -Are there any additional relevant laws other than the ones we have reviewed (insert list) that we should review? Are there any regulations which govern the provision of water services? Which?
 - -Are there any relevant policies? How are policies adopted and can they be enforced? What is the process for public participation in law making, regulation making, and policy making? Is public participation required (by law)?
- -Are the laws and regulations being implemented and enforced?
 - -How do you know the laws are being implemented and enforced? What types of indicators/criteria/factors do you examine to determine that the law is being implemented and enforced?
 - -How do you determine that the law is having the intended and desired impact?

Q #2: How does national-level law support the adoption and application of WASH standards?

- -What is the process for developing and adopting WASH-related standards?
- –What is the process for revising WASH-related standards?
- -Are these processes set forth in regulation or policy? Can you provide the document? Who wrote the regulation or policy?
- -Are these processes ever reviewed and changed?
- -Where international standards exist and no domestic standard exists, are international standards adopted, or are unique domestic standards developed? How is that decision made? When there is a domestic standard, and an international standard is adopted later in time, is the domestic standard reviewed and amended (if necessary)?
- –Which standards are compulsory? Which are voluntary? How do you decide which standards are compulsory or voluntary? Are there any standards which were originally voluntary which are now compulsory?

Q #3: How do national-level laws create an enabling environment for NQI related to WASH products, reduce barriers to trade in WASH products, and support efforts to increase access to safely managed water and sanitation?

- -Are there any unique rules or requirements for foreign companies exporting WASH products to the country (Ghana, Uganda, Zambia) that are different from domestic companies that create WASH products?
- -Do foreign companies lose IP protections when they export their product to the country?
- —Are the procurement requirements or procedures different for foreign versus domestic WASH products (e.g., more or less stringent)?
- -Are public-private partnerships allowed, generally? Are there any differences in the governing rules or requirements when a partner is foreign v. domestic?
- -Are there any examples of PPPs? What is their purpose? Have they been successful (at increasing access to WASH, improving the quality or variety of WASH products available to customers)?
- –What kind of information is required to be made available to the public about WASH products/services? Is it different for domestic v. foreign companies?
- Q #4: Examine workforce development generally in the WASH sector, including whether industry associations have been formed and whether a skilled workforce has been institutionalized through required certification processes.
 - -Have industry associations for WASH professionals been created?

- -Are WASH professionals required to be certified? Which types of professionals or jobs require certification?
- -What are the certification requirements (e.g., complete classes, receive a certificate, have a certain degree, attend classes during career)? How long does it take to be certified?