2022 CLA CASE COMPETITION

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Case Title:

No Power, No Water: Using CLA to Adapt to Lebanon's Unprecedented Water Crisis

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Workers install the last solar panels on the water pumping station of Ras El-Ain in South Lebanon, which distributes water to ten villages, benefiting over 100,000 people.
Credit: Lebanon Water Project

Summary:

The USAID-funded Water Sanitation and Conservation (WSC) project aims to enhance conservation and protection of Lebanon's water resources. When the political, banking, and socio-economic crisis in Lebanon reached an unprecedented level, the four Regional Water Establishments (RWEs) were unable to operate and maintain their public water, wastewater, and irrigation utility services which benefit about 86.5 percent of people in Lebanon. The sudden increase in fuel costs drastically undermined their ability to obtain or produce power to run their water and wastewater facilities.
To respond to the RWEs' immediate needs in maintaining and sustaining critical public services, WSC used the CLA process to quickly reshape and reframe its project intervention for Year 1 and 2. The technical evidence-based results and institutional knowledge gained from the WSC's predecessor project, Lebanon Water Project (LWP), generated lessons learned that WSC studied and used. In addition, strategic collaboration facilitated by a trusting relationship between USAID/Lebanon, the WSC project team, and the RWEs resulted in selecting solar power systems as a reliable and sustainable source of power for 22 water and wastewater related facilities.

Once the 22 solar power systems are installed, these interventions will reduce the RWEs' operation and maintenance (O&M) budget and save them an estimated $2.1 million per year collectively in fuel costs. WSC's CLA approach will help prevent many RWE facilities from being shut down due to fuel shortage which would have put over 173,600 households at risk of not receiving water or wastewater services. Finally, WSC's CLA process strongly supports USAID's Climate Change Strategy 2020–2030 by reducing greenhouse gas emissions in the estimated amounts of 6,318 tons of carbon dioxide, 1,441 tons of carbon, and 1,042 tons of nitrogen oxide per year.

Which two subcomponents of the Collaborating, Learning & Adapting (CLA) Framework are most reflected in your case? Please reference them in your submission.

- Internal Collaboration
- External Collaboration
- Technical Evidence Base
- Theories of Change
- Scenario Planning
- M&E for Learning
- Pause & Reflect
- Adaptive Management
- Openness
- Relationships & Networks
- Continuous Learning & Improvement
- Knowledge Management
- Institutional Memory
- Decision-Making
- Mission Resources
- CLA in Implementing Mechanisms

1. WHAT: What is the general context in which the case takes place? What organizational or development challenge(s) prompted you to collaborate, learn, and/or adapt?

The WSC project is a five-year USAID-funded project implemented by DAI Gobal LLC in Lebanon. Its purpose is the enhanced conservation and protection of Lebanon's water resources through achieving three objectives: expanding capacity of wastewater and sanitation management; increasing efficiency of public water utilities to manage water resources; and enhancing citizens' water stewardship.

Since October 2019, Lebanon has been facing an unprecedented political, banking, and socio-economic crisis that is among the worst the world has seen. The COVID-19 pandemic, combined with the devastating August 2020 Beirut port explosion, worsened the situation. Lebanon has devalued the Lebanese pound (lira) by more than 94 percent as pegged to the US dollar. During 2021 and 2022 inflation rates have been in triple digits and is said to be worse than that of Venezuela and Zimbabwe. The overall impact of the crisis is substantial: unemployment has reached 40 percent of the population, and more than 70 percent of the population live in poverty.

The removal of national subsidies of commodity goods in summer 2021 resulted in sudden fuel and electricity shortages, followed by a rapid increase of fuel cost. Diesel fuel prices are 32 times higher now than September 2021. Lebanon's national electricity provider, Electricite du Liban, EDL, previously provided 12 to 22 hours per day of electricity, but now only provides up to two hours per day, with the deficit partially made up through expensive private diesel generators. This significantly undermined the ability of WSC's main partners, the four public Regional Water Establishments (RWEs), to operate and maintain their public water, wastewater, and irrigation utility services and obtain or produce power to run their water and wastewater facilities. Lebanon's water sector is facing its worst-case scenario with water shortages affecting over four million people and raw sewage openly being dumped into Lebanon's waterways and the Mediterranean Sea.

To respond to the RWEs' immediate needs in maintaining and sustaining critical public services, WSC used the CLA process to quickly reshape and reframe its project intervention for Year 1 (Aug 21-Sept 22) and Year 2 (Oct 22-Sept 23) to provide crisis response support to the RWEs' critical needs. Among the adaptations of the original concept of work for Year 1 is the extensive provision of solar power to provide a reliable and sustainable source of power for both water and wastewater systems and offices to reduce the RWEs' energy costs that represent about 40 to 55 percent of their total operation and maintenance costs.

2. WHY: Why did you decide to use a CLA approach? Why was CLA considered helpful for addressing your organizational or development challenge(s)?

The socio-economic crisis in Lebanon drastically worsened since the WSC scope was originally developed. Fortunately, WSC was designed with the intention of using CLA to be flexible and adaptive to a changing environment, and in particular utilizing context monitoring. The importance of CLA was foreseen due to the project's anticipated operations in a country facing political instability and economic challenges. At project launch, WSC quickly conducted meetings with its main stakeholders, the four RWEs, to assess the impact of the ongoing crisis and its effect on their operations and to analyze and develop solutions for their emerging challenges.

These strategic meetings with RWEs' Director Generals and technical managers resulted in a solid collaboration with the RWEs, enabled by a culture of openness that allowed them to be at ease in sharing their challenges and current critical needs. The RWEs uniformly stated that given the interwoven financial, fuel and electricity crisis, they face many unsurmountable problems. Their challenges include the inability to obtain foreign currencies needed to obtain repair parts; the devaluation of water tariffs collected in Lebanese pounds and the deficit between tariff collections and expenses, which include diesel fuel and maintenance costs. The RWEs stated their top priorities were to sustain and maintain their current facilities and not build new facilities or systems, as originally planned in the WSC work plan. The RWEs communicated that they were at high risk of being incapable of fulfilling their mandated water sector management responsibilities.

CLA, through its structured approach to learning and adapting, offered an opportunity to rethink project approaches to address these challenges. The urgent need to modify the project's planned interventions was explicitly clear. WSC paused and reflected on RWEs' feedback and context monitoring. Then, in consultation with USAID and the RWEs, using the CLA process, WSC strategically adapted its original focus for Year 1 to shift support toward the RWEs' immediate needs to maintain and sustain their services using a well-developed crisis response road map.

3. How: Tell us the story of how you used a collaborating, learning and/or adapting approach to address the organizational or development challenge described in Question 2.

Following project launch, WSC realized there were many challenges facing the project and its original intent developed in 2020 that focused on improving wastewater management including significant wastewater construction projects. The WSC team's existing relationships with the RWEs, established during previous USAID projects, greatly facilitated open and candid discussions concerning the RWEs' problems. During multiple face-to-face meetings with RWE senior management, the RWEs consistently reported that they had severe fuel and finance shortages and that their number one priority was to continue to provide potable water, with wastewater management being a lower priority. They also said that since 2021 EDL is at most only providing two hours of electricity per day, so the only way they could run their water and wastewater facilities was through the use of diesel generators. However, due to the significant devaluation of the Lebanese pound from 1,515 per US dollar in 2019 to almost 26,000-31,500 per US dollar in 2022, the RWEs' ability to obtain EDL power and purchase diesel fuel was crippled. As such, all of the RWEs expressed high interest to WSC in planning and implementing solar power systems to operate their facilities to compensate for the recurring electric power cuts and their limited ability to purchase diesel fuel. Since many of the WSC staff had worked in the previous Lebanon Water Project (LWP) and previously installed eight solar power systems for the RWEs, the Director Generals were confident that the experienced WSC team could effectively utilize solar power systems to help them.

Based on these assessments, WSC met with USAID to discuss the crisis impact on previously planned WSC project activities and recommended adaptations and re-prioritizing of project plans. In close collaboration with USAID, WSC decided that under the current economic crisis, the project should postpone some of the early interventions mentioned in the WSC contract such as rehabilitation and construction of new or expanded wastewater facilities. WSC gained USAID's approval and buy-in to adapt its approach in water sector assistance to sustain and maintain operations at the facilities largely through provision of solar power. This approach satisfied USAID's concern about long-term sustainability of implemented activities after the life of the project; properly planned and implemented solar power systems have rapid pay-off periods and require significantly less O&M support than diesel generators, and they provide clean green energy. The RWEs were also highly appreciative of this revised project approach.

By late 2021, within three months of project start, WSC developed a crisis response road map that included three main pillars of interventions to address critical RWEs needs in WSC's Year 1 and possibly Year 2. The pillars were: (1) identify, design and build photovoltaic (PV) solar power installations for both water and wastewater facilities; (2) support O&M performance-based contracts to select wastewater facilities; and (3) procure critical tools, equipment and spare parts for the RWEs. These three well-chosen and strategic interventions were carefully selected to comply with the WSC contract while adapting to the RWEs' most critical needs. WSC's choice in these interventions, developed from close collaboration with the RWEs and strategic consultation with USAID, made sure that the project funds will be used efficiently to support the water sector in the most appropriate and effective way. The implementer’s previous experience and institutional knowledge gained from running the LWP from 2015 to 2021 generated lessons learned that WSC studied and used moving forward. LWP contributed to a 35 percent reduction in the facilities' O&M expenses through the installation of eight solar energy systems, providing nearly 1.2 million KWh per year of energy to operate facilities that provide water services for over 160,000 people.

Capitalizing on its LWP experience, WSC strove to continue spreading the culture of alternative energy use in Lebanon. LWP's past credibility among the RWEs expedited the identification of sustainable PV projects under WSC. In fact during 2021, WSC screened 74 RWE projects that resulted in 22 PV solar systems being chosen that will either partially or fully operate water and wastewater facilities and RWE offices. Each PV system will provide six to ten hours of daily power (depending on the season and weather) resulting in 25 to 35 percent reduction in energy costs and collectively providing 5,785 KW to facilities benefiting nearly 795,000 residents. After six months of implementation, WSC’s CLA approach remains actively in use as WSC continuously engages with the RWEs through regular meetings to ensure successful project interventions. Considering that the RWEs are unable to obtain, in the short and medium term, fuel for their diesel generators to power their facilities, WSC will likely increase provision of new solar power systems to at least an additional 25 facilities in Year 2.

4. ORGANIZATIONAL IMPACT: How has collaborating, learning and adapting affected your team and/or organization? If it's too early to tell, what effects do you expect to see in the future?

Adopting and utilizing the CLA approach from project onset led to establishing an environment of continuous learning and enhanced the WSC team's ability to adapt and operate with uncertainty and to face project challenges. As the Lebanese crisis reached an unprecedented level, the team knew that they could not start implementing previously planned project activities unless the current context of the operating environment in Lebanon was considered, as well as planning critical support for the RWEs for the next 12 to 24 months. Through WSC's close and intimate engagement with the RWEs, it was clear that the project had no choice but to shift priorities from expanding and improving wastewater services to performing crisis response actions that focused on sustaining and maintaining RWEs' existing services. Given that the CLA process is embedded in the WSC project and practiced regularly through pause and reflect sessions, WSC followed through with team restructuring and activity and Year 1 work plan adjustments to better fit the context of the economic crisis in Lebanon. Through this CLA approach, the WSC team, in close discussion with USAID, changed its Year 1 work plan to designing and providing solar power systems for prioritized water and wastewater facilities. This approach provides the RWEs a source of sustainable green energy while greatly reducing their O&M expenses and offering them a resilient source of service continuity.

By embracing the CLA process, WSC staff were receptive, adaptive, and flexible in adjusting to challenges and critically reviewing and using experiences and knowledge to make decisions in their work to achieve greater impact. In April 2021, WSC conducted its first semi-annual pause and reflect (P&R) session in which each WSC team reflected on the first six months of implementation, identified what worked well and what didn't, and used lessons learned to make informed decisions to adapt plans for the next quarter of implementation. For example, the team reviewed and adjusted the procurement planning cycle based on experience gained to date. The project will continue using open communication and activity reviews such as learning summits and brainstorming sessions to constantly pursue improvement of its efforts and effectiveness.

5. DEVELOPMENT IMPACT: How has using a CLA approach contributed to your development outcomes? What evidence can you provide? If it's too early to tell, what effects do you expect to see in the future?

Although we are not able to immediately measure development results of the planned installation of the 22 solar power systems, by using reliable scientific and engineering modeling tools, calculations, and documented success from measured performance outputs from similar projects constructed in LWP, the anticipated financial and environmental benefits resulting from these projects is unquestionable. In addition, the technical evidence-based results from the WSC predecessor project, LWP, demonstrated that the installation of eight solar energy systems contributed to a 35 percent reduction, on average, in RWE energy cost for each facility. WSC is confident in the projected benefits of the planned solar power systems for 2022 and additional projects anticipated in 2023 will provide long-term sustainable benefits to the RWEs. The WSC project greatly benefited from its carry-over of institutional knowledge and well-established professional relationships between its project team and the RWEs due to the fact that over 80 percent of the WSC team came from the former LWP. In designing and building the new solar power systems, WSC is now extending USAID involvement in renewable energy opportunities that provide a reliable source of green energy for the RWEs' water and wastewater facilities, including offices and labs, while supporting the RWEs' service sustainability and continuity and reducing their reliance on non-renewable energy sources. This approach strongly supports one important goal of USAID's Climate Change Strategy 2020–2030: to reduce greenhouse gas emissions. WSC anticipates that once the 22 solar power systems are installed, these interventions will reduce the RWEs' O&M budget and will save them an estimated $2.1 million per year collectively in fuel costs. More importantly, WSC's provision of the solar power systems will help prevent numerous water and wastewater facilities, which serve over 173,600 households, from being shut down due to the shortage of fuel. Importantly, the planned solar power system plants do not produce air pollution or greenhouse gases when operating. WSC solar energy assistance in Year 1 will contribute to reducing hazardous emissions and further supports USAID Lebanon's Country Cooperation Development Strategy 2021-2026 to promote sustainable clean energy solutions, combat climate change, and strengthen environmental stewardship.

6. ENABLING CONDITIONS: How have enabling conditions - resources (time/money/staff), organizational culture, or business/work processes - influenced your results? How would you advise others to navigate any challenges you may have faced?

CLA has been deeply rooted in WSC since the project's inception. Our first enabler is our USAID Contracting Officer's Representative (COR), who is a strong supporter of CLA. Also, WSC's great staff composed of dedicated professionals, many retained from LWP, preserve invaluable institutional memory that is essential to effective decision-making. In addition, WSC staff's solid relationship, trust, and confidence with its key stakeholders, the RWEs, is a valuable enabler. The extensive internal and external collaboration allowed the WSC team to fully analyze the RWEs and project challenges together; pivot with strategic interventions; and demonstrate critical innovative and flexible approaches in a timely manner. Another enabler was the adaptive culture of the project leadership who promoted openness to new learning, using lessons learned and accepting innovative changes and their swift adaptation. All were key enablers to the successful implementation of WSC's CLA strategy. This organizational culture is embedded in WSC's Learning Plan and is regularly implemented using learning mechanisms such as quarterly reviews, semi-annual pause and reflect sessions, and an annual learning summit.

One early concern was the perceived challenge of proposing adaptations to Year 1 (and possible Year 2) interventions while still working within the boundaries of the WSC contract and scope of work. However, through regular communication and collaboration with USAID, WSC developed, prioritized and implemented project adaptations that were fully contract compliant. The solid relationships and transparent communication between the RWEs and USAID were enabling conditions that empowered the project to overcome great challenges by successfully identifying and approving sustainable solar power projects in a timely manner. The WSC teams internally and externally collaborated to quickly adjust the Year 1 work plan. WSC also ensured that its crisis response activities supported its contractual targets set in the WSC MEL plan and contract deliverables.
To navigate similar challenges, implementers must anticipate changing environments and rapidly assess and respond to those problems. Effective and close collaboration with key stakeholders and USAID will allow the development of adaptive activities and methodologies responsive to their needs.