

EWB-USA 2022 Impact Report

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Summary of Findings

Throughout 2022, Engineers Without Borders USA (EWB-USA) head office and country office staff traveled to five countries to visit partner communities to learn more about the impacts of climate change on our partner communities, as well as to take the opportunity to do long-term monitoring on projects that were completed between 1-11 years ago. During these trips, staff collected project impact data from 33 projects in 26 different communities through focus groups and conversations with community members and leaders, community organizations, and local NGO and government partners. The goal was to understand how projects were doing in the long-term and what the impacts of EWB-USA projects were for communities. This report summarizes what we learned, and shares some of the stories of impact for our community partners.

Impact Story Themes

Across countries and across project types, communities shared stories with us about how their lives have changed since the project was constructed. We have grouped these stories into the following four findings:

- Community partners are healthier and have a better quality of life.
- Community partners have increased educational opportunities and improved learning environments.
- Community partners have more time resulting in improved economic and other opportunities.
- Communities are more organized and have a sense of solidarity with neighboring communities.

Long Term Monitoring Results

Of the 33 communities that were visited:

- **82%** had a score of 75% or higher for **functionality** indicating the project is functioning consistently with minor or no issues.
- **82%** had a score of 75% or higher for **quality** indicating the local standards were met, the project met community needs, and the community was highly satisfied with the project.
- **82%** had a score of 75% or higher for **sustainability** indicating the project is being maintained, repairs are being completed by the community as needed, and there are sufficient funds available to conduct the repairs.
- **85%** had a score of 75% or higher for **community capacity** indicating there is a functioning community-based organization (CBO) that is regularly collecting funds to support the project.

- **91%** had a score of 75% or higher for **value** indicating communities are still satisfied with the project and that it met their expectations, even years after some of the projects were completed.

Recommendations and Next Steps

The impact work summarized in this report has given the staff a great opportunity to come together and reflect on the impact of the work of the organization and the processes that are used to monitor the impact. Following each trip, the data, stories, and tools were discussed and the conclusions and recommendations for improvements to the process going forward are discussed in more detail in the final section of the report. The recommendations focus on four major themes: 1) Data collection and tools improvements; 2) Impact story improvements; 3) Continuous project improvements; and 4) More impact trips.

Special thanks to the EWB-USA staff and community members for their support in collecting data and sharing their stories with us.

Introduction

In late 2021 and early 2022, as the lifting of COVID travel restrictions became a real possibility, EWB-USA staff began to conceptualize an opportunity for staff from the U.S. office and from the Country Offices (CO) to travel to our partner communities to learn more about the impacts of climate change on our partner communities, as well as to take the opportunity to do long-term monitoring on projects that had been completed for at least one or more years (some for more than 10 years). This report will focus on the long-term monitoring and impact data from those trips. To read more about the climate change findings, view the [climate initiative report](#).

Goals of the Impact Trips

Learning about our Impact – The goal of the initiative was to understand how life has changed in our partner communities after an EWB-USA project(s) has been implemented, ranging from about one year to 11 years post-construction. To do this, staff conducted community meetings and focus groups to listen to our community partners with the following goals:

- Understand if our indicators are leading to sustainable and functioning projects in the long-term.
- Understand and document the impacts that EWB-USA projects have on community partners, not just in relation to the indicators, but also to learn how life has changed since project completion.

Develop Long-Term Monitoring Guidance - After hearing from our partner communities, staff is planning to update EWB-USA's community survey and long-term monitoring practices and tools so that chapters and staff can eventually collect this data in a streamlined format.

Methodology

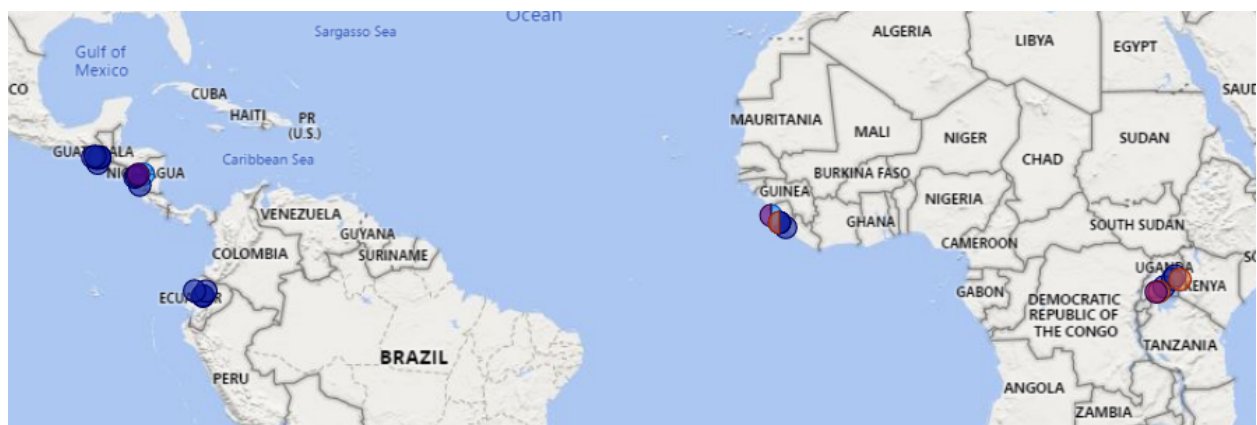
Community Selection Criteria

With limited resources available, the initiative could not collect data from all or even most of the community partners with completed EWB-USA projects around the world. In order to narrow down the community partner list, the selection criteria below were developed to try to choose a representative sample of communities from each of the countries. Criteria included:

- Mix of project types (water, sanitation, structures, energy, etc.);
- Strong working relationship with the EWB-USA CO, chapter, and/or local NGO partner;
- Geographically clustered due to limited time; and
- Projects in the monitoring phase (one year post-construction) or long-term monitor phase (more than a year post-construction).

Communities Selected

Based on the selection criteria, the locations were narrowed down to 33 projects in 26 communities in five countries. The completion dates of the projects range from February 2012 to December 2022 (1-11 years since construction was complete). The project types represented all the project types that EWB-USA conducts including: water, sanitation, structures, civil works, agriculture and energy. The map below shows the project locations and has a link to a dashboard that can be used to further explore the projects monitored.



[Link to the Dashboard to explore the locations](#)

Data Collection Method and Tools

With the support of Country Office staff (where applicable) and US-based staff, communities were either visited or contacted ahead of the staff visit to provide some background/context and prepare them for the upcoming visit. A variety of stakeholders were invited to participate in interviews and focus groups, including:

- Community Members – A wide range of community members were invited, including men and women. Women’s participation was particularly important in that they play a large role with food preparation, water, and community health in general.
- Community Leadership – The interviews included both traditional authorities and project specific leadership, such as water committees.
- Government Officials – Where the local government had a role in the project (permitting, inspection, financing, etc.), the local government officials were invited to the interviews.
- Local Non-Governmental Organization (NGO) Partners – Most of EWB-USA’s projects have local NGO partners that facilitate the projects. Many of these NGOs work with multiple communities in an area so they can add a regional perspective to the information.
- Community-Based Organization (CBO) Members and Operation and Maintenance (O&M) Personnel – The most detailed project information often comes from the people responsible for O&M. This project specific information is ideal for lessons learned to improve the future projects.

Interviews and focus groups began with an introduction and discussion of the purpose of the questions and what we plan to do with the information. In some communities, there were multiple focus groups conducted with community members. The focus groups started with a more formal question and answer session and then in some cases, the team would walk with the community to see the project. These less formal chats during the walks were valuable in that the individual community members would open up outside of the formal group setting. Additionally, seeing the impact firsthand increased our understanding of the stories we heard from community members.

The tool that was used to collect the long-term impact data was a combination of the standard Community Experience Survey that is conducted with community members during the monitoring trip, and the long-term monitoring questions, which are focused on our indicators. The tool was piloted in Nicaragua on the first trip, and then updated after each trip, based on staff feedback. The final draft version of the survey questions can be found in Appendix B. We still plan to continue to pilot and then modify this tool before incorporating it into the official monitoring trip PMEL activities.

Limitations

While we were able to collect a significant amount of data and stories from many communities and various project types regarding the impact of EWB-USA projects on community partners, there were a number of limitations to the data collection, analysis, and accuracy that are important to note.

- The impact survey tool that was used was iterative in that we made changes after each trip based on the feedback, recommendations, and lessons learned from staff. The goal of making changes was to continue to improve upon the tool; however, this also made data analysis challenging, since it wasn’t consistent across the countries.

- Staff had different levels of training on data collection and utilizing the tool, as well as different methods of collecting the data. While this allowed for some flexibility, it also resulted in a range of depth in responses, some with lots of notes and quotes from community members, and others with minimal qualitative data and stories.
- Given the limitations of time and resources, we were unable to collect data from all completed projects in the countries visited. Furthermore, the communities we visited were mainly communities that could be contacted ahead of the visit by the EWB-USA Country Office staff (or HQ staff in the case of Sierra Leone). This means that communities that no longer have contact with EWB-USA were underrepresented.
- The impact data collection was combined with the climate data collection, which resulted in some confusion with community members, since the topics are distinct. It also may have resulted in “survey fatigue” in that community members were asked to respond to a lot of questions. If the focus was only on gathering the impact data, we may have been able to spend more time hearing and collecting more robust stories from community members.

Indicator Analysis and Findings

The projects were evaluated based on the standard EWB-USA long term monitoring framework. The framework evaluates projects in the five domains: functionality, quality, sustainability, community capacity, and value. For each domain, a series of questions are used to gather qualitative responses. The qualitative responses are then compared to a rubric to evaluate a quantitative scoring ranging from 0-100% for each domain. The qualitative responses also provide a better understanding of the “why” behind the score. Each indicator and rubric are described in the following section. In addition, quantitative results from the 33 communities visited were aggregated and graphed below to show how projects that have been closed out between 1-10+ years ago are generally doing, according to these indicators. Stories from the communities visited are also included under each indicator to show the human side of these indicators and what they really mean for EWB-USA project outcomes over the long-term.

Functionality

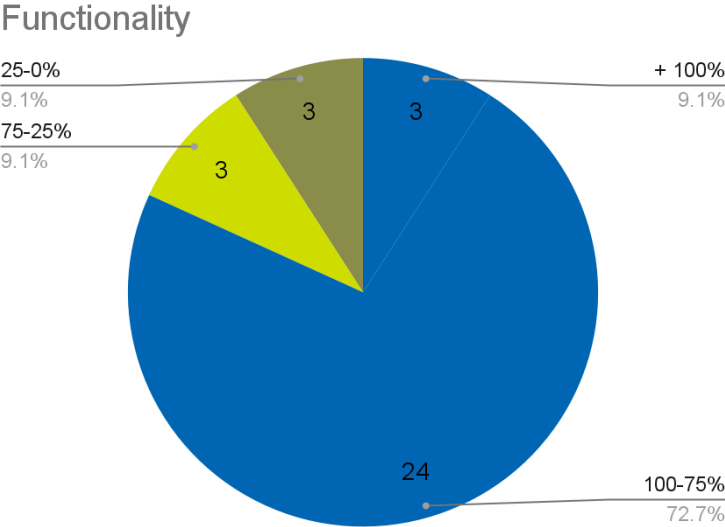
Functionality refers to the usability of the project and how it is operating at the point at which the monitoring occurred. We are investigating whether the project is physically functional and the overall community opinion about that functionality itself. The following rubric shows how the level of functionality is determined:

Domain	0-25%	26-50%	51-75%	76-100%
Functionality	Project rarely functions or does not function at all	Project functions but often has major performance issues	Project is functional most of the time with limited unplanned	Project functions consistently with minor issues.

		that require unplanned maintenance.	maintenance issues.	
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Functionality Results

Of the 33 communities that were visited, 82% had a score of 75% or higher for the functionality indicator, which means that for most of the projects visited, the project is functioning consistently with minor or no issues.



What Communities Shared

Tierra Nueva, Nicaragua (Agriculture - Ag Processing Facility/Building)

This community partnership was formed in November 2012 and the project was completed in 2017. The Tierra Nueva community is made of families that came together to become land-owning, sustainable farmers with the help of the NGO, Agros International. The scope of the project was to construct a coffee processing system to help the community of Tierra Nueva get better value for their coffee harvest and become an economically sustainable community. The project scope also included the design and construction of a wastewater treatment facility to treat the byproducts of the coffee processing. The building and equipment provide access to facilities not previously available to many of the farmers, including equipment and water. The facility is currently fully functioning as designed, and has enabled the community members to increase crop production, reduce costs, and repay the local partner, Agros, for ownership of the farmland they work on. In addition, the project is also utilized for more functionality than originally designed, including a shelter, storage area, and gathering spot for nearby farmers and members of the community.



Nicaragua, Tierra Nueva (Agricultural Processing Facility/Building)

Quality

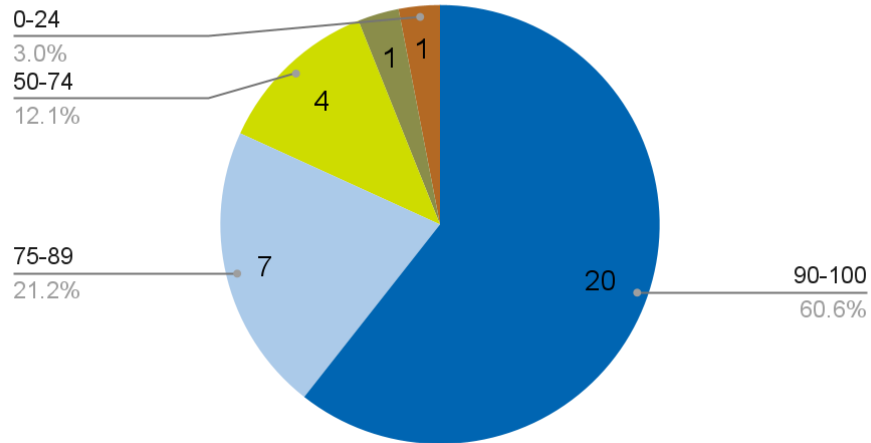
Quality refers to the project fulfilling the requirement of meeting community needs that were made clear when the project was first proposed. More specifically, it refers to whether the project has any performance issues and whether it meets community demands and local standards. The following rubric shows how the level of quality is determined:

indicator	0-25%	26-50%	51-75%	76-100%
Quality	No project delivered.	Project partially complete or with low community satisfaction.	Project functioning and the community is mostly satisfied with the project.	All local standards were met and/or community satisfaction is high.

Quality Results

Of the 33 communities that were visited, 82% had a score of 75% or higher for the quality indicators, which means that for most projects, the local standards were met, the project met community needs, and the community was highly satisfied with the project.

Quality



What Communities Shared

Budope, Uganda (Water Supply)

Our community partners in Budope, Uganda were very satisfied with the quality of the well project. This is witnessed by the care they were taking of the well. They had constructed their own enclosure around it and the well apron and surrounding area were clean, well swept, and free of trash. In addition, the well itself was in good operational condition. Often you see deteriorated and worn bearings on hand pumps, but on examination of this pump, there was no shake or play in the handle and overall, it showed little signs of wear. The good condition of the well mechanism indicates the quality and sustainability of the pump and well and demonstrates that this solution was appropriate for the problem and the community.

In conversation with the community we heard the following:

- *"(The) hand pump works very well with adequate water whose levels do not reduce even during dry season and has had no major issues that require repair since installation."*
- *"Our children no longer drown at the swamps where we used to fetch water. Our children are very safe. Cases of diarrhea have gone down. We don't have to boil water before drinking it. The distance to the water source has shortened. The cases of teenage pregnancies have reduced because our daughters do not have to go far for water alone."*



Uganda, Budope water project

La Loma, Guatemala (School Improvements)

The bathroom upgrades to the school of La Loma were completed in June 2019. Prior to the construction of the new toilets and handwashing station, the latrines were isolated from the main building and accessible from outside the school, requiring the students to leave the school grounds and travel via road to access them. This caused security and safety issues for children when they go to the bathroom. Additionally, there was only one faucet available for the student body of 150 children to wash their hands. The constructed upgrades added 7 faucets which greatly improved the students ability to wash their hands, thus improving the overall hygiene of the school. As of November 2022, EWB-USA observed all of the faucets and toilets to be in good working order with the school conducting repairs as necessary. The community stated that they are very happy with the bathroom access now being on school grounds and with the design as it utilizes a biodigester.



La Loma School Improvements Handwashing facility

Sustainability

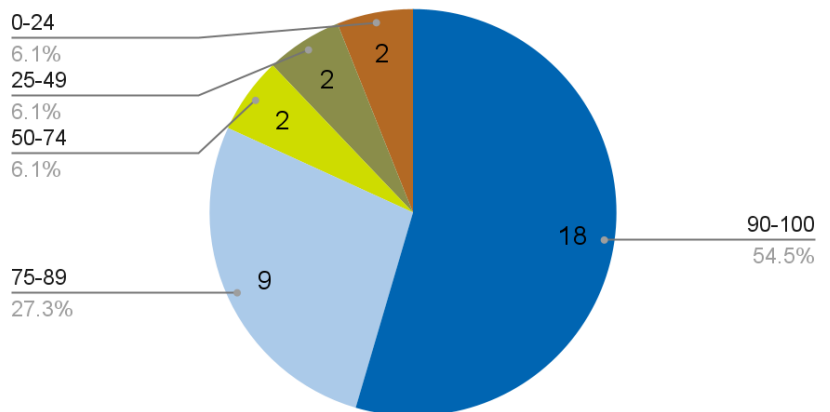
Sustainability evaluates the project and its longevity after it has been implemented, and after EWB-USA has been involved. It considers operation and maintenance (O&M) of the project, whether the proposed O&M has been followed, and any additional information regarding repairs. The following rubric shows how the level of sustainability is determined:

Domain	0-25%	26-50%	51-75%	76-100%
Sustainability	Project is not being maintained (no O&M manual/training provided.)	Project is being maintained, but repairs are expensive, complicated, and take a long time.	Project is being maintained, but repairs are expensive and take moderate time.	Project is being maintained and repairs are reasonably priced and simple.

Sustainability Results

Of the 33 communities that were visited, 82% had a score of 75% or higher for the sustainability indicator, which means that for most communities, the project is being maintained, repairs are being completed by the community as needed, and there are sufficient

Sustainability



funds available to conduct the repairs. It also signifies that the training and operations and maintenance manual provided by EWB-USA and/or local partners were overall sufficient.

What Communities Shared

Tingo Pucara, Ecuador (Water Supply)

In Tingo Pucara, Ecuador, the community worked with an EWB-USA chapter to complete a water distribution system to connect 27 families to tapped water stands. The system was completed in February 2012 and is still working 10 years later. The community shared that they have a water board in place that is functioning and that collects funds regularly. They have been able to repair the pump once about seven years ago. They also shared that they still have the O&M manual and still continue to use it. Unfortunately, the COVID-19 pandemic has impacted their ability to collect enough funds to replace the pump again. However, their ability to maintain the system over the past 10 years is a testament to the importance of having a strong CBO, a useful O&M manual, and a solid fee structure in place.



Water board members sitting in front of their operation and maintenance plans

Nicaragua, El Limón (Sanitation - Latrines)

The latrine project in El Limón, Nicaragua was completed in 2018 (5 total structures). As of March 2022, the composting toilets are all performing as designed and the owners are supporting all operation and maintenance activities. Owners of the latrines take pride in the maintenance and operation of their facilities and follow all instructions that are posted on the wall. The structures are close to the well and



Latrine project in El Limon, Nicaragua

they serve as a model to members of the community that live close or pass by. The latrine project has been impactful on both the general health of the community, as well as inspiring additional members to construct latrines on their property separate from the project.

Community Capacity

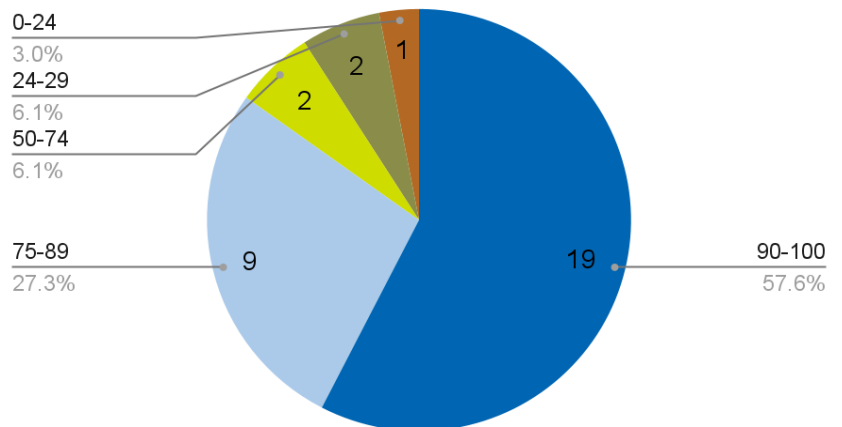
Community Capacity is the ability and capacity of the community and its respective Community Based Organization (CBO) to be able to provide support and funding for the project. The following rubric shows how the level of community capacity is determined:

Indicator	0-25%	26-50%	51-75%	76-100%
Community Capacity	No management board present and funds unavailable.	Funds unavailable some of the time, no management board.	Funds available most of the time, management board present.	Funds regularly available and management board functions properly.

Community Capacity Results

Of the 33 projects that were visited, 85% had a score of 75% or higher for the community capacity indicator, which means that for most communities, there is a functioning community-based organization (CBO) that is regularly collecting funds to support the project.

Community Capacity



What Communities Shared

Malingua Pamba, Ecuador (Water Supply)

The water project in Malingua Pamba was completed in June 2012. The project included the following: upgrade the existing community potable water system, expand distribution to all the households in the water shed, eliminate pipe damage and outages due to excess water pressure and improve



Focus group in Malingua Pamba discussing the partnership and project impacts with EWB-USA

water quality by source selection and protection.

About 10 years after project completion, the CBO continues to work well, represents the community, and collects funds for O&M. With the fees collected, the community has been able to make the necessary repairs. The water board shared, *"We collect funds. The water board received training about how to operate the system. The operator has also trained someone else."* In addition, the community shared that they are more organized and the project brought the community together. *"We have mingas (work brigades)."* They also have been able to provide capacity building and training to nearby communities.

Wai, Sierra Leone

Wai is a community in southeastern Sierra Leone that has partnered with a chapter to initially improve access to water; however, the partnership has grown to include construction of a new health care facility. The existing water supply in Wai before the project was made up of several hand pumps that were at different stages of repair and functionality. The community expanded their water committee and received training on maintenance and fee collection, in addition to working with the chapter to repair all the wells and replace aging pumps. Now all pumps are the same model and the community is raising funds for repairs and conducting them quickly after repairs are needed. Before the visit, the water committee had just repaired two pumps by replacing seals. The repairs were paid for by the money in the community project management account. The community was proud of the work of the water committee and their leadership and thought the monthly fees to access water were affordable for the quality and convenience of the water.



Masa Feka the chairlady of the Water Committee describing how the water project has benefited the community of Wai. [Click to view the video.](#)

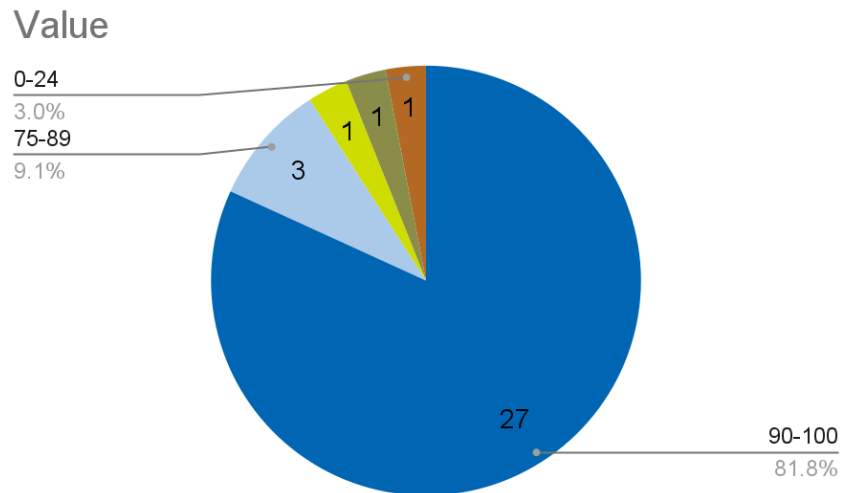
Value

Value refers to the impact of partnering with EWB-USA on the value of this project. Specifically this refers to whether the community is satisfied with the project compared to other alternatives that might have been considered, and whether the community believes the quality of the project itself is satisfactory. The following rubric shows how the level of value is determined:

Domain	0-25%	26-50%	51-75%	76-100%
Value	No project delivered or EWB-USA expectations not met.	Project was not delivered in its entirety, some issues with chapter performance.	Project delivered late, EWB-USA performance was mostly satisfactory.	Project delivered completely and EWB-USA met most, if not all expectations.

Value Results

About 90% of the 33 communities visited had a score of 75% or higher for the value indicator. This demonstrates that overall, communities are still satisfied with the project and that it met their expectations, even years after some of the projects were completed.



What Communities Shared

Matru, Sierra Leone (Hospital Staff Housing)

The Lehigh Valley chapter has been working in Matru Sierra Leone for over 15 years. The Matru hospital was the second of four community partners and the



The expanded Staff Housing facility at the Matru hospital in Sierra Leone.

“Staff Housing and Video Conference Room” project was the third project in the partnership, following a few latrine projects. The staff housing project was reported by the administration and the staff that live in the facility as a great project that has improved patient outcomes by allowing the staff to stay closer to the hospital in case emergency situations occur at night. The facility is also an incentive to recruit new staff and to retain existing staff. The value of the project is easily seen, as it was a high priority for the community, and it was completed timely through remote work during the pandemic. It also utilized an existing unused building that was expanded to provide a more usable space. Finally, the video conference room that was installed as a way to provide communication during construction has created an additional revenue stream for the hospital and allowed the staff at the hospital to receive training on medical procedures and to consult with doctors around the world on cases.

Zapote Bridge, Guatemala

After the eruption of volcano “fuego” in 2018, the local Rotary Club contacted a member of the community-based organization to ask if they would like an improvement for their bridge. The Rotary Club had a set amount of disaster funds to spend and were looking to improve a bridge. Rotary then reached out to EWB-USA. The project was initiated by the staff of EWB-USA Guatemala. From project initiation



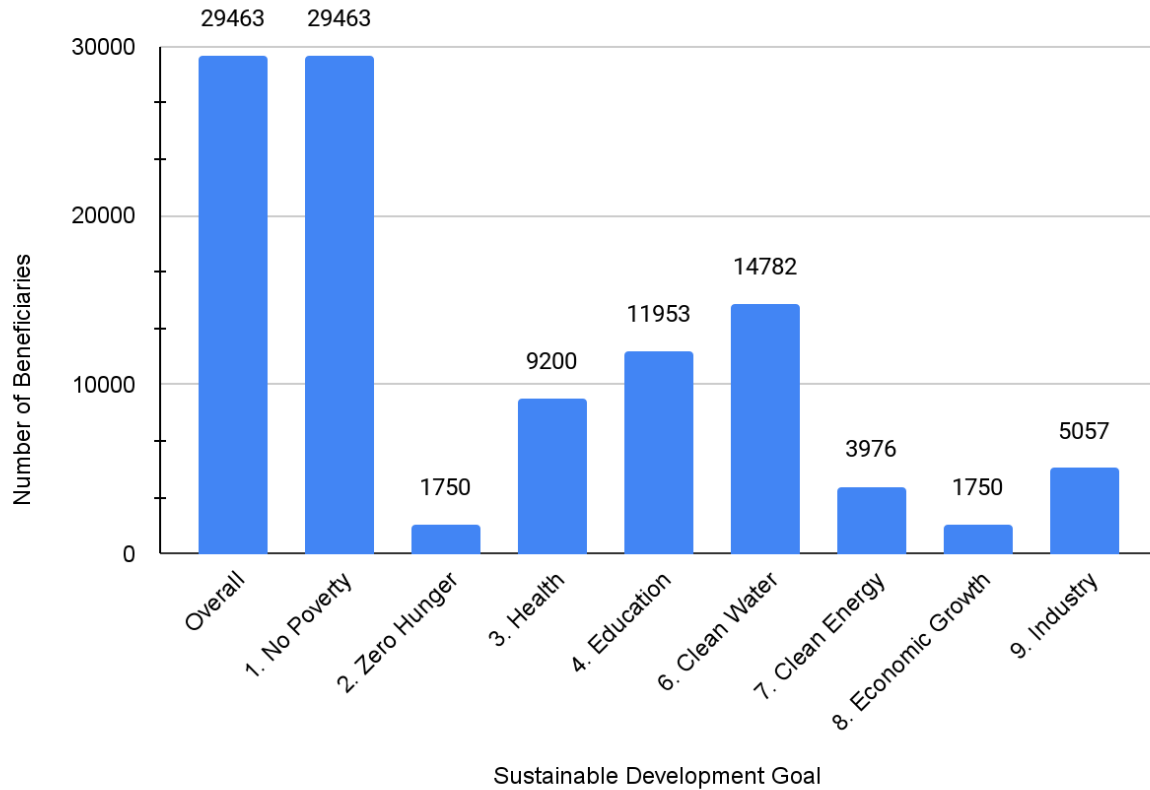
in August 2018 to completion in November 2018, the bridge was back up and functioning in under three months. During the visit, it was identified that maintenance was not being conducted on the bridge and the community was not collecting funds for repairs.

Impact Findings - Stronger Together

SDG Contributions

The projects that were monitored had a variety of impacts on the communities where the projects were conducted. The number of beneficiaries for the projects was 29,463. The benefits of the projects were wide ranging across many areas of life. The UN Sustainable Development Goals set targets for the development of communities around the world. The projects monitored had impact across eight (8) of the goals that EWB-USA maps projects to. The table below summarizes the contribution of the projects to these SDG's.

SDG Contribution of projects monitored



Impact Stories

Across countries and across project types, communities shared stories with us about how their lives have changed since the project was constructed. We have grouped these stories into four common impact themes:

1. Community partners are healthier and have a better quality of life.
2. Community partners have increased educational opportunities and improved learning environments.
3. Community partners have more time resulting in improved economic and other opportunities.
4. Communities are more organized and have a sense of solidarity with neighboring communities.

Community partners are healthier and have a better quality of life

Communities shared that there have been health improvements and less sicknesses in the community since the project was implemented.

- *“There is a big improvement in respiratory health.” ~ Nuevo Amanecer, Nicaragua (cook stove project)*

- *“There is less disease in the dry season because we used to have to travel really far in the dry season to find a stream.” ~ Wai, Sierra Leone (community/health clinic water project)*
- *“Before, the kids got sick and now their health is better.” ~ Tingo Pucara, Ecuador (water project)*

Communities in Guatemala and Ecuador shared stories about walking to the river and carrying buckets of water before, and how their quality of life has improved significantly since they do not have to carry water anymore.

- *“We had to go to the river before with donkeys. Now we can clean the house and bathe. We can wash clothes in our home.” ~ Guantugloma, Ecuador*
- *“Life has improved because we do not have to carry buckets of water. We are really happy now that we have water.” ~ Caserio Chosavic, Guatemala*

The Curingue community in Ecuador shared that their ability to bathe has increased leading to a general improvement in sanitation since the water project was implemented.

- *“We used to not bathe for weeks at a time, sanitation is better because we can bathe more.”*

A hospital sanitation project in Sierra Leone has resulted in an improvement in sanitation for all stakeholders and the community at-large.

- *“The latrines have improved the sanitation at the hospital for patients, staff, and visitors, as well as the nearby community. They are being used way more than originally expected.”*

In Zapote, Guatemala, a bridge project has improved the safety and quality of life, as well as access to other communities and locations.

- *“Kids can cross safely, the quality of life has improved due to better communication with other communities, and we can travel a more direct route to get to locations.” ~ Zapote, Guatemala (bridge project)*



Nicaragua, Nuevo Amanacer (Cookstove project)

Community partners have increased educational opportunities and improved learning environments

For some communities, a school building with access to water, energy, and/or sanitation services has improved educational opportunities for students and allowed for more focused study opportunities.

- *"The children have a better place to study."* ~ Los Cerritos, Guatemala
- *"Students have more time to study instead of collecting water."* ~ Wai, Sierra Leone
- *"We have access to clean water for basic use, students do not have to walk long distances to fetch water."* ~ Hope Integrated Academy, Uganda
- *"The (solar) system will allow for many uses and improved learning, and will be cheaper."* ~Sierra Leone, Lower Allentown
- *"Life has changed a lot. We are very happy with the school, the one before was very small and now there is more space. The kids' lives have improved."* ~ El Aguacate, Guatemala

In Chi Elias, Guatemala, the school project has allowed the community to expand its use for meetings and cultural activities.

- Teachers shared, *"We are more comfortable and have the capacity to have meetings and cultural activities."*

In Matru Jong, Sierra Leone, the school project has allowed for a number of improvements for students, as well as for the community at-large.

- *"We have better attendance, we are able to attract more students, test scores are higher, and sanitation has improved. "*



Guatemala, Los Cerritos (School project)

Community partners have more time resulting in improved economic and other opportunities

Many communities shared how their time has freed up as a result of the project and so they have more opportunities to work and earn money.

- *“Before, we could not work, it was one full day to collect water. It was like gold when water came.” ~ Curingue, Ecuador*
- *“We used to need to walk 2-3 hours for water, used to use buckets and animals. We had to get up early in the morning and we stayed awake late at night. Now we can sleep more, wake up later, we have more time, we have more money, our shoes last longer.” ~ Tingo Pucara, Ecuador*
- *“Everything has changed. Life is easier. We used to go to the river to get water, it took a long time, it wasn’t easy. Took a full day to fill the tanks at the river. We used animals to get water, everyone participated, including the kids. Now we have more time to find jobs. We earn more money because we can work more. We also have more time to rest.” ~ Agua Fria, Ecuador*
- *“We don’t have to spend time in line for water so we have more time at home and for crops.” ~ Los Gomez, Nicaragua*



Nicaragua, Los Gomez (water project)

In Nicaragua and Uganda, communities shared how they have earned or saved money as a direct result of the project.

- *“It (fish pond project) has been a great source of income to the benefiting families especially during this hard economic situation.” ~ Omorio, Uganda*
- *“We have had significant savings on the cost of firewood - approximately 50% less. We save more time cooking as it takes much less time to heat the stove.” ~ Nuevo Amanecer, Nicaragua*

Communities are more organized and have a sense of solidarity with neighboring communities

Communities in Ecuador shared that through the EWB-USA projects in the area, they were able to provide support to neighboring communities, and they also experienced that their own

community became closer and more organized through the project experience. They feel a sense of solidarity.

- *"We collaborated with a neighboring community, Tingo Pucara. "Somos familia" (we are family). We would also help other communities." ~ Curingue, Ecuador*
- *"We have been able to support and work with other communities." ~ Malingua Pamba, Ecuador*
- *"It (the project) brought the community together. The community is more organized and more powerful now. People are more friendly and we are able to compromise better." ~ Malingua Pamba, Ecuador*

Reflections and Next Steps

The impact work summarized in this report has given the staff a great opportunity to come together and reflect on the impact of the work of the organization and the processes that are used to monitor the impact. Following each trip, the data, stories, and tools were discussed and the following conclusions were made about potential improvements to the process going forward. The recommendations focus on four major themes: 1) Data collection and tools improvements; 2) Impact story improvements; 3) Continuous project improvements; and 4) More impact trips.

Data Collection and Tool Improvements

The tools for collecting long term monitoring data existed before the work commenced. The tools and a database for collecting the data was analyzed at the onset and refined following each trip. The resulting tool, which is attached to the report, generated detailed findings for each of the domains. Ultimately the tool was usable and generated the information needed to analyze the impact of projects and indicators across all project types.

However, a number of areas for further improvement were identified. Due to the limited access to the internet in communities and to improve the personal nature of the conversations, it was found that using printed versions of the questionnaires and taking handwritten notes during the conversations and focus groups was the most effective. **Having a natural conversation with focus group participants versus asking each question in order, allowed the discussions to flow and resulted in stronger stories and more honest discussions about impact and issues.** This is the preferred method going forward, but it creates a need for multiple rounds of data entry. **Finding a more streamlined data entry process would improve the usability of the data and lessen double work while maintaining a natural flow in the focus groups.** The natural conversations were also limited by the overlap of questions in the indicator domains. For instance, the functionality of a project is often impacted by the maintenance and community capacity to collect funds for repairs. **This is reflected both in the overlap of questions in each domain section and highlighted when a conversation about the project is happening in a focus group.** Providing more clarification to data collectors about the overlap of domains would help

to improve both the focus group and the resulting data. Also, there was a wide range of variability between each of the data collectors. This would likely be heightened by the use of volunteer teams using the tools. **It will be important to expand and standardize the training for how to use the tools and the rubrics for both staff and volunteers.**

Impact Story Improvements

The impact trips have highlighted the value of getting personal stories of impact about the projects. These stories of impact are invaluable for the Country Office staff, Denver staff, and volunteers in building excitement for the work from new and existing volunteers, attracting donors to the work, and in connecting stakeholders to the community members. Having tools to get high quality ethical stories is key to organizational success and expanding the impact of the organization in future communities. The trips were successful in exploring new ways to gather and tell stories.

The impact survey tool was a great way to get conversations flowing particularly in the value section. A number of the questions generated great discussions and reflections during the focus group meetings. **In particular, question 19 (*How has your life changed since the completion of the project(s)?*) generated valuable insights into the impacts of the project.** This question should definitely not be skipped at any opportunity to collect data and is valuable both in large group sections, focus groups, and household interviews. **This question partnered really well with video interviews of project beneficiaries, as highlighted in the video in the Community Capacity section above.** It would be good to have a series of follow up areas of impact to help guide the discussion into a more well-rounded picture of the impact. In some cases, the impact of the project reported was in a very narrow aspect, which limits the ability of the data to be used in a quantitative way after coding the feedback. Adding a checklist of potential areas of impact for each project could be valuable to develop in the future. **Finally, all the participants were briefed at the beginning of the focus group meetings about how the photos, videos, and stories would be used; however, it would be good to develop a more formalized process for how to get explicit permission from participants.** This is particularly important for the use of photographs and videos.

Continuous Project Improvement

As highlighted in the indicator sections, about 80% of projects are meeting expectations across all domains over the long term (1-11 years after the project is constructed). While it may be difficult to ultimately reach 100%, it is certainly something to strive for. It is important to take every opportunity to improve the delivery of projects. A number of specific areas for how to improve the design, execution, and maintenance of future projects were identified.

One major reason for projects not performing as expected was the ability of the community to raise funds for and conduct repairs and maintenance. Some of these issues stem from unclear expectations at the start of a project. **It would be good to have a more standardized onboarding and training process for communities about what to expect when starting a project with**

EWB-USA. Several communities mentioned that if they could give advice to a community just starting the process, it would be to set up a committee in the community and start preparing to raise the funds for repairs. **Based on this feedback, it would be good to connect communities together to share best practices directly.** In many cases, communities had to raise funds for repairs following unexpected or expected maintenance. Having systems to raise, track, and spend funds was reported by many communities as the most important part of the project process for them. **Creating tools and stressing the importance of generating long term operational funds has been a big shift in the focus of discussion for EWB-USA in the last four years, with expanded focus on the maintenance of projects.** Whether this will have the impact needed will be seen down the road. Finally, many communities discussed the importance of training for how to conduct repairs and the importance of finding local suppliers and contractors to do the work. **It is important for all teams to train community members about repairs and to identify trusted contractors for communities to contact in the event of planned or unplanned repairs.**

More Impact Trips

The results of these impact trips have been invaluable. They have generated data and stories about the long term impact of projects, which had not been generated for over six years. The trips will certainly continue to provide value to the organization as we engage new donors and improve projects. In particular, **one of the benefits has been expanded collaboration across offices and improvement of local staff to define and contribute to future long term monitoring process development.** In the future, it would be good to conduct these activities more regularly. **To do this, specific funds should be developed,** in addition to finding ways to incorporate impact investigations into existing efforts. For example, these impact trips were possible through funds from a climate change initiative grant. Finally, all the analysis in this report was conducted by staff. While this allowed for uniform training and a streamlined process, **going forward it would be good to increase the use of third parties to collect data because they are removed from the process and original project delivery.**

Appendix A: List of projects monitored

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
Ecuador					
Tingo Pucara, Ecuador - Water Supply	Water Supply	2/4/12	11	Functioning	<p>Solidarity: "Our community has been able to support neighboring Curingue community, which creates a feeling of solidarity."</p> <p>Opportunity / Time: "We used to need to walk 2-3 hours for water, used to use buckets and animals. Had to get up early in the morning and we stayed awake late at night. We are really happy now. We have more time. We can take showers, wash clothes, wash dishes."</p> <p>Improved Health: "We can sleep more, wake up later, we can rest, we eat better."</p> <p>Improved Health/Sanitation: "We could also wash our hands during the pandemic."</p> <p>Improved Health/Sanitation: "Before, the kids got sick and now their health is better."</p> <p>Improved Economics: "We have more money and our shoes last longer."</p>
Malingua Pamba, Ecuador - Water Supply	Water Supply	6/30/12	11	Functioning	<p>Improved Health: "Cleaner community, our kids are healthier."</p> <p>Solidarity: "We collaborated with Tingo Pucara "somos familia". We would also help other communities."</p> <p>Improved Sanitation: "We used to not bath for weeks at a time; sanitation is better because we can bath more."</p> <p>Time/Opportunity: "Before the project, we had to walk 2-3 hours to get water, took a full day. We could not work."</p> <p>Opportunity: "People are returning to the community because we now have water."</p>
Quantugloma, Ecuador - Water Supply	Water Supply	4/30/16	7	Functioning	<p>Improved Quality of Life: We had to go to the river before with donkeys. Now we can clean the house and bath. We can wash clothes in our home.</p>

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
Ecuador, Agua Fria - Water Supply	Water Supply	12/10/2020	2	Functioning	<p>Time/Opportunity: More time and opportunity to work Improved Economics: Increased income due to ability to work more and less time collecting water. Improved Health: More time to rest. Improved Capacity: Community received a number of trainings regarding maintenance, as well as general WASH trainings.</p> <p>"Everything has changed. Life is easier. We used to go to the river to get water, it took a long time, it wasn't easy. Took a full day to fill the tanks at the river. We used animals to get water, everyone participated, including the kids. Now we have more time to find jobs. We earn more money because we can work more. We also have more time to rest."</p>
Ecuador, Curingue - Water Supply	Water Supply	4/10/2022	1	Functioning	<p>Improved Health: "Cleaner community, our kids are healthier." Solidarity: "We collaborated with Tingo Pucara. "Somos familia" (We are family). We would also help other communities." Improved Sanitation: "We used to not bathe for weeks at a time; sanitation is better because we can bathe more." Time/Opportunity: "Before the project, we had to walk 2-3 hours to get water, which took a full day. We could not work." Opportunity: "People are returning to the community because we now have water."</p> <p>"Agua es la vida. Estamos felices, estamos tranquilos." ("Water is life. We are happy, we are at peace.")</p>
Guatemala					
Zapote Bridge	Structures	11/17/18	4	Functioning	<p>Improved Safety / Quality of Life / Access / Opportunities: The community is very satisfied because the bridge has allowed them to cross the river without wading through the river. The kids can cross easily</p>

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
					and safely. The quality of life has improved with better communication with other communities. It also allows for more direct routes to get places and has increased connection and trade. Finally, it has reduced trash in the area.
Los Lucas School Improvements	Sanitation	7/26/19	4	Functioning	Improved Sanitation / Safety: The community is very happy with the design overall. They are happy that the students can access the bathroom and water on school grounds instead of traveling via road, which is more dangerous near the school.
Colonia Los Cerritos, Guatemala - Structures (School)	Structures	9/30/19	3	Functioning	Improved Learning Environment: “We feel grateful for the new school, the old school was small and it was made from bamboo and now the kids have a beautiful roof and the kids have a better place to study.”
El Amate, Guatemala - Civil Works (Retaining Wall)	Civil Works	6/16/20	3	Functioning	Improved Learning Environment: The students can study in a formal place, they feel safer and happier and teachers are more stimulated. The school used to have a dirt floor and there was lots of dust so they are very satisfied to now have a building with a floor.
Chi Elias School	Structures	12/15/21	1	Functioning	Improved Learning Environment / Opportunities: The community is very satisfied with the project and it has allowed them to convene in a better space that is more comfortable for the students and teachers. “Before we had a roof made of clay and now we have good natural light.” They also now have a place to hold meetings and cultural activities.
Guatemala, Caserío Chosavic - School	Structures	5/6/22	1	Expanded	Improved Learning Environment and Quality of Life: Life has changed a lot. The kids and the teachers feel more comfortable and the kids have more space. The teachers and kids are less stressed. Life has also improved because they do not have to carry buckets of water and they feel happier.

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
Guatemala, Sector 3, Caserío La Fé, Puiujil 2 - Water Supply	Water Supply	5/20/22	1	Functioning	Improved Quality of Life: The community is very satisfied with the spring box and its design, including the solar pump. It has allowed them to access water without carrying buckets of water to their homes from other water sources.
El Aguacate, Guatemala - Sanitation (Latrines)	Sanitation	5/30/22	1	Functioning	Improved Learning Environment and Quality of Life: Life has changed a lot. They are very happy with the school and the bathrooms. The one before was very small and now there is more space. The kids' lives have improved.
Nicaragua					
Tierra Nueva, Nicaragua - Agriculture	Agriculture	12/18/15	7	Expanded	Improved Economic Opportunities: The agriculture processing structure has been very beneficial to the local agricultural producers of Tierra Nueva. In this area, agricultural land is located away from the general community, so farmers are required to travel to and from daily. Since construction, the new facility has met the needs of local producers by providing access to facilities not previously available, such as shelter, storage, equipment and water for processing. The local partner, Agros, worked with the community to install coffee processing equipment that previously required travel and fees to use. The facility is currently utilized for more functionality than originally designed and has enabled the community members to increase crop production, reduce costs, and repay the local partner, Agros, for ownership of the farmland they work on. This project has contributed significantly to the development and prosperity of the community.
El Limón, Nicaragua - Energy (Solar)	Energy	5/1/17	6	Partial Functioning	N/A - The solar project is no longer being used as the pump has been replaced and power connected to the grid. The energy project was initiated to bring a steady power supply to operate a pump in the existing well and distribution system. Over the years, the community utilized the project's solar panels and controls to support the water supply needs. Issues with

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
					pumps and well output occurred over time and the solar components are no longer utilized by the community as the pump is powered directly by the energy grid. When the project was utilized, it helped support the sustainable water distribution to the community.
El Limón, Nicaragua - Sanitation	Sanitation	5/19/17	6	Functioning	<p>Improved Health and Community Organization: The latrine project (5 total structures) has been impactful on both the general health of the community, as well as inspiring additional members to construct latrines on their property outside of the project. Owners of the latrines take pride in the maintenance and operation of their facilities and follow all instructions that are posted on the wall. The structures are close to the well and they serve as a model to members of the community that live close or pass by.</p>
Nuevo Amanecer, Nicaragua - Energy (Stoves)	Energy	6/26/20	3	Functioning	<p>Improved Health and Quality of Life / Time / Improved Economics Opportunities:</p> <ul style="list-style-type: none"> ● Virtually zero smoke inside the homes - much more enjoyable to be inside. ● Significant savings on the cost of firewood - approximately 50% less. ● Save more time cooking as it takes much less time to heat the stove. ● Improved health / exposure conditions in the community. ● There is a big difference in breathing / respiratory health environment ● Maintenance on the new stoves is much less than traditional mud/wood stoves, also less ash cleanup ● There is more space to cook on the stove, saving time, making things easier

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
Los Gomez, Nicaragua - Water Supply	Water Supply	12/10/21	1	Functioning	<p>Improved Health / Time / Community Capacity:</p> <ul style="list-style-type: none"> • They feel that they have better health but don't have statistics. • The project was completed over a number of years so the community members are comfortable and capable of operating, repairing, and maintaining the system. • The community initially had 'sticker shock' with fees but that has led to improved water management practice. • The community do not have to spend time in line to obtain water and have more time for at home responsibilities and agricultural production. • They feel the water is safer because of the testing done on the well.
Sierra Leone					
Matru Jong, Sierra Leone - Sanitation	Sanitation	2/23/2013	10	Functioning	<p>Improved Learning Environment and Sanitation/Health: More attendance, able to attract students, higher test scores, except for Ebola and Covid. The sanitation is improved as well.</p>
Matru Jong, Sierra Leone - Water Supply for School	Water Supply	5/1/2013	10	In Need of Repair	<p>Improved Learning Environment and Sanitation/Health: More attendance, able to attract students, higher test scores, except for Ebola and Covid. The sanitation is improved as well.</p>
Matru Jong, Sierra Leone - Structures (Centennial School)	Structures	3/1/2014	9	Functioning	<p>Improved Learning Environment and Sanitation/Health: More attendance, able to attract students, higher test scores, except for Ebola and Covid. The sanitation is improved as well.</p>
Matru Jong, Sierra Leone - Energy (Centennial Secondary School)	Energy	2/1/2016	7	Functioning	<p>Improved Learning Environment and Sanitation/Health: More attendance, able to attract students, higher test scores, except for Ebola and Covid. The sanitation is improved as well.</p>
Lower Allentown, Sierra Leone - Water Supply	Water Supply	6/4/2018	5	Partial Functioning	<p>Improved Health/Sanitation: When water is produced, it helps with sanitation particularly with the</p>

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
					toilets. Drinking is a great use for the water particularly in the dry season, helps to keep the place clean. Easy accessibility for cleaning and use.
Lower Allentown, Sierra Leone - Energy	Energy	12/10/2018	4	Expanded	Reduced Costs / Expanded Opportunities / Improved Learning Environment: With fuel instead of solar, the price can be up to 20l/day at 21 Leones per liter. The system will allow many uses, cameras, AC, fridge, security of the building and improved learning environment.
Hospital - Out-patient Toilets	Sanitation	3/11/2019	4	Functioning	Improved Sanitation / Expanded Access: The latrines have improved the sanitation at the hospital for patients, staff, and visitors, as well as the nearby community. They are being used way more than originally expected.
Wai, Sierra Leone - Water (Medical Facility)	Water Supply	5/3/2019	4	Functioning	Improved Health / Time / Quality of Life: Easy distance to the water and easy to collect. We traveled really far in the dry season to find a stream. Much less disease in the dry season. We can collect water quickly after returning from work in the field to start dinner. I am happy to have less conflict with my wife knowing that water collection is close. More time to study. Much cleaner water, pure, and safe.
Matru Hospital Staff Housing	Structures	2/3/2020	3	Functioning	Reduced Costs / Expanded Opportunities: The staff housing makes it easier to find and retain staff because housing can be provided in the offer letter. It also helps the patient outcomes because the staff are available for calls at all hours. The cost is lower to fund late night patients because staff does not need to find transport to the hospital.
Uganda					
Power Supply and Water Sanitation Project for the Hope Integrated	Energy	8/16/14	9	In Need of Repair	Solar Project N/A - The school used to have reduced electricity bills with the presence of solar systems. The solar was used for lighting, conducting welding lessons

Name	Type	Completion Date	Years	Current Project Functionality	How has your life changed since the completion of the project?
Academy					and pumping water. Now these classes are no longer taught. Water Project Expanded Access to Water / Time: They have access to clean water for basic use, students do not have to walk long distances to fetch water. Some of the community also uses the water.
Kalisizo, Uganda - Water Supply (Rainwater Harvesting)	Water Supply	1/1/15	8	Partial Functioning	N/A - No stoves appeared to still be in use and no community members were available for interview.
Shilongo Village, Uganda - Water Supply	Water Supply	7/26/16	7	In Need of Repair	N/A - The bicycle pump and the solar pump have failed.
Omorio Village, Uganda - Agriculture	Agriculture	8/1/19	4	Functioning	Improved Economic Opportunities: It has been a great source of income to the benefiting families especially during this hard economic situation.
Budope, Uganda - Water Supply	Water Supply	1/10/2019	4	Functioning	Improved Health / Safety / Quality of Life: "Our children no longer drown at the swamps where we used to fetch water. Our children are very safe. Cases of diarrhea have gone down. We don't have to boil water before drinking it. The distance to the water source has shortened. The cases of teenage pregnancies have reduced because our daughters do not have to go far for water alone."
Kawango Village, Uganda - Water Supply	Water Supply	5/15/2020	3	Functioning	Improved Health / Time: They now have clean water, people and students no longer fall sick. They don't have to walk long distances to fetch water.

Appendix B: Final Impact Survey Format

Project Impact Questions: Community Experience Survey and Long-Term Monitoring

Purpose of Survey: These survey questions should be conducted with community partners for any project that has completed construction and is in the monitoring phase. They can also be asked for long-term monitoring purposes for any project that has been completed for two years or longer. Questions can be conducted in a focus group format or with individual community leaders.

Rubric Instructions: At the end of each section, please note the percentage for the relevant domain (Functionality, Quality, Sustainability, Community Capacity, Value), as well as 1-2 sentences to explain the percentage in the rubric based on the community's responses for that section.

Note: Questions marked with an * are required.

General Community and Project Information

Community Name:

Type of Data Collection (focus group, interview, survey, etc.):

First Name (if individual):

Last Name (if individual):

Organization Affiliation (CBO, committee, etc.):

Position in community (if applicable):

Live in Community? Y/N

1. **General/Background:** Please share a brief background/history of the project(s) with EWB-USA. Comparta un breve historial/antecedentes del proyecto(s) con EWB-USA.

Functionality

Functionality refers to the usability of the project and how it is operating at the point at which this monitoring is occurring. We are investigating whether the project is physically functional and the overall community opinion about that functionality itself.

2. ***Functionality:** How often is the project functioning as designed? Con qué frecuencia funciona el proyecto según lo diseñado?
3. **Functionality:** Are there any problems with the system (current or historically)? ¿Hay algún problema con el sistema (actual o históricamente)?

Domain	0-25%	26-50%	51-75%	76-100%	Relevant questions
Functionality	Project rarely functions or does not function at all	Project functions but often has major performance issues that require unplanned maintenance.	Project is functional most of the time with limited unplanned maintenance issues.	Project functions consistently with minor issues.	2, 3
	Score (0-100): Explanation:				

Sustainability

Community Capacity is the ability and capacity of the community and its respective Community Based Organization (CBO) to be able to provide support and funding for the project.

10. ***Community Capacity:** *Is a CBO in place? ¿Existe una CBO?*

11. **Community Capacity:** *Is the CBO functioning well? Are there any issues? ¿Funciona bien la CBO?*

12. **Community Capacity:** *Do they represent the community interests well? ¿La CBO representa bien los intereses de la comunidad?*

Domain	0-25%	26-50%	51-75%	76-100%	Relevant questions
Community Capacity	No management board present and funds unavailable.	Funds unavailable some of the time, no management board.	Funds available most of the time, management board present.	Funds regularly available and management board functions properly.	10-12
	Score (0-100): Explanation:				

Quality

Quality refers to the project fulfilling the requirement of meeting community needs that were made clear when the project was first proposed. More specifically, it refers to whether the project has any performance issues and whether it meets community demands and local standards.

13. **Quality:** *Were local standards met? (PLEASE NOTE: This question should be skipped if community members do not know the answer to this question.)*

Circle one: Standard Met; Most standards met; Less than half of the standards met; Standards not met

14. ***Quality:** *How likely are you to recommend working with EWB-USA to other nearby communities? Que tan probable es que recomienda trabajar con ISF EE.UU a otras comunidades cercanas?*

Not likely / Poco probable Neutral Very likely / Muy probable
1 2 3 4 5 6 7 8 9 10

14a. ***Quality:** *Please describe why you provided the rating in question 14. Describa por que proporcionó la calificación en la pregunta 14.*

Domain	0-25%	26-50%	51-75%	76-100%	Relevant questions
Quality	No project delivered.	Project partially complete or with low community satisfaction.	Project functioning and the community is mostly satisfied with the project.	All local standards were met and/or community satisfaction is high.	13, 14
	Score (0-100): Explanation:				

Value

