

DRAFT End of Project Evaluation: Craras, Luca & Uma Quic (CLU)- Timor Leste

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Introduction:

WASH for Craras, Luca & Uma Quic was a three-year ADRA Australia funded project with three broad objectives:

- 1) Improve community access to clean drinking water
- 2) Improve community access to sanitation facilities using a CLTS approach
- 3) Improve personal hygiene through behaviour change

The project ran from 1 July 2013 to 30 June 2016 with implementing partners *Serviço De Águas e Saneamento (SAS) – Viqueque (technical advice & monitoring)*, *CLU GMF (sustainability)*, *BESIK (engineering)*, *Ministry of Health (sanitation technical advice and health statistics)*, *UNICEF (sanitation & hygiene material)*, and local NGO: *FHTL, NGF, CBB (socialization)*.

ADRA Australia and ADRA Timor Leste contracted the author of this evaluation report to assess accomplishments and lessons learned. It was noted that this was the first project of its size to be undertaken by ADRA Timor Leste and that the current ADRA staff were not employed at the time of project design. It was further noted that Viqueque area is known by NGOs as a difficult area to work.

Between July 11 and July 22 2016, the author conducted a desk review of key documents, interviewed ADRA staff and conducted detailed community consultation and infrastructure inspections in 3 beneficiary communities in Viqueque District. Approximately 70 beneficiaries and key informants participated in focus group discussion and key informant interviews over five days of intensive fieldwork facilitated by ADRA Timor Leste.

The following report acknowledges ADRA's commitment to making the project a success while proposing several key recommendations for future activity.

Acronyms

ADRA Adventist Development and Relief Agency

GFS Gravity Fed System

GMF Water Management Community

Executive Summary:

For ease of reporting the executive summary is presented in three sections.

Water	<p>Findings:</p> <ul style="list-style-type: none">• In Craras and Luca the two Gravity Fed Systems are fully functional, highly appreciated by community, and significantly benefit women and girls.• Use of Ferrous Cement tanks in Luca is notable for its cost savings when compared to the steel tank in Craras.• In Craras and Luca both GMF's are functioning with promising evidence of ongoing management. Sustainability and management of these systems may be compromised in the future by volunteer 'exhaustion' and lack of support.• In Craras and Luca the piping throughout the village is not sufficiently buried and in some cases increased water supply has led to additional environmental hazards not addressed by the GMFs.• In Craras, Luca and Uma Quic, ADRA has remediated the work of contractors where agreed standards were not met.• The provision of just one open well in Uma Quic is an unfortunate outcome that reflects a lack of assets mapping and consultation in the design phase.• Given the high failure rate of bore wells in Timor Leste, it is important that SAS is involved throughout installation to ensure a line of responsibility. This can be included in the MOUs signed. <p>Recommendations:</p> <ul style="list-style-type: none">• Future GFS projects can utilize Ferrous cement tanks as an alternative to expensive, Australian made steel tanks.• In future GFS projects, connection of water should be contingent on satisfactory trenching and associated works being completed by the local community. This can be achieved by scheduling digging towards the end of the rainy season.• To inspire continued volunteer management of the GFS systems, a stipend funded from community funds collected or an ADRA grant might be considered, or possibly a project for managers (such as aquaculture). Support should be longer.• Local agencies such as SAS should be given joint responsibility for overseeing independent contractors. This is especially important because SAS has ongoing responsibility for water system management and should work with the GMFs.• More time for asset mapping and consultation in the design phase of the project may improve community engagement and lead to more effective solutions. For example, in Uma Quic there is a pre-existing water system built by GTZ and an adequate water supply system negating the need for shallow wells.
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Sanitation**Findings:**

- Community mobilization in Uma Quic was especially effective despite a lack of access to water.
- Less than 100 of the 350 low cost latrines have been built, partially due to opposition by government to use of subsidies within CLTS. This resulted in subsequent delays in activity.
- Although ADRA proposed to use a CLTS approach there was a lack of capacity within ADRA and a lack of support by government to apply it effectively, consistently and in a timely manner.
- Despite some success where local leadership was strong, many community members did not want low cost toilets and they tend to view them as a hygiene risk. This is a valid concern where low cost toilets are pit latrines without ventilation and where water is infiltrates or is added to the pit.
- The most commonly cited concern of beneficiaries that that they wanted permanent toilet structures with access to water.
- The school toilets visited did not meet best practice standards for a school setting and current remediation is under way to restore them to an appropriate standard.

Recommendations:

- Ongoing consultation with government in the design and early implementation phase of CLTS is advisable.
- Partnership with local government and local health volunteers is advisable in the community mobilization phase if a CLTS approach is adopted.
- ADRA staff would benefit from training in the CLTS approach prior to commencement of project activity.
- It may be useful to consider low cost toilet construction in communities where toilets are scarce. In communities where there are already many higher quality toilets it might be more appropriate to provide subsidies or incentives to poor households.
- In general, ADRA is advised not to encourage construction of low-cost toilets in low-population density areas where water is more than 100m away and toilets are likely to become a hygiene hazard.
- School toilets constructed by ADRA should be modeled after recent government toilets and construction overseen by SAS.

Hygiene

Findings:

- Statistics provided by clinic staff in Craras and Luca indicated a 17-20% decrease in treated diarrhea cases in the six-month period after ADRA's Hygiene 'triggering'.
- Triggering meetings held in a school setting were valued by teachers and students.
- Provision of hygiene instruction was valued by beneficiaries; however, coverage was low within target communities and the beneficiaries spoken to typically attended one triggering meeting followed by house-to-house visits by project staff to encourage them to build toilets.
- While beneficiaries reported change in hand-washing practices, and ADRA staff gave preliminary instruction on how to make a 'tippy-tap', most low-cost toilets inspected did not have a system for hand-washing.
- In Craras, the village was very unhygienic due to large amounts of animal waste, sewage overflow, and lack of animal management.

Recommendations:

- Ideally, beneficiaries would attend more than one triggering meeting in a CLTS process.
- Ideally, ADRA would utilize a simple curriculum for Hygiene education.
- Hygiene education should extend to animal management and use of tippy taps.

Evaluation Limitations:

This evaluation took place in July 2016. The GFS systems in Craras and Luca were handed over to the communities in 2014 and 2016 respectively (Luca's water system was handed over in June 2016). CLTS activities began late in 2015 and were compressed into a short period of time.

Although two independent translators were contracted, the standard of translation was not as high as required.

Despite these limitations it is evident from the author's research that the findings of previous monitoring and evaluation activities by ADRA are coherent and consistent.

Summary of Evaluation Participants:

ADRA Staff	2
School Teachers	3
High School Prefects	6
SAS staff	5
Village/Community Chiefs	4
Clinic staff (doctor/nurse)	2
GMF	9
Beneficiaries	48
TOTAL	71

Discussion (Water):

The GFS's in Craras and Luca represent a significant accomplishment for both ADRA and the community. At time of inspection the systems were functioning effectively with high levels of appreciation expressed by community members. (See Figure 1 Smiley Face) Although the system in Craras had not functioned for approximately 6-9 months in the two years after installation (largely due to community angst and some technical problems) these issues seem to have been resolved. Community conflict in Luca over pump location is a reminder of the importance of community consultation early in the project.

In both Craras and Luca, pumps had been upgraded by either ADRA or SAS using low cost Chinese models that are more easily replaced. The use of lower cost, higher volume pumps is wise given their availability.

The most significant beneficiaries of ADRA's water projects were women. Women consistently reported that the two GFS projects in Craras and Luca had given them more time (in some cases up to 3 hours per day) which they invested in household activities. Anecdotal accounts suggest significant impact on girls whose school attendance increased with water availability improvement. Virtually all beneficiaries stated however that they still boiled water for consumption.

The use of Ferrous Cement tanks in Luca is notable for its cost savings when compared to the steel tank in Craras (See Figure 2 Tank Comparisons). A water access schedule was necessary to ensure access at all tap stands, however the community viewed the project as a significant improvement. Unfortunately, the system was so recently handed over to the community that it was not possible to review its success over time. Community concern that the system did not extend far enough to one part of the community is understandable as a matter of equity, however such an extension was not feasible and this is understood by the community. Provision of open wells with installation of an electric pump may have been useful.

In Craras and Luca both GMF's are collecting funds from the communities with promising evidence of ongoing management. In Craras the fee has been increased to \$5 USD per household however it remains to be seen whether this will be successful and there is some hostility from households not receiving adequate water, some suspicion about the motive of the GMF volunteers and an expectation that Government should repair the system when it breaks. The extent to which all members of the GMF's participate in routine maintenance was unclear. Further, the sustainability and management of these systems may be compromised in the future by volunteer 'exhaustion' and lack of support from SAS. There is little evidence to suggest that GMF members will be able or willing to manage the systems in the longer term without incentives.

In Craras and Luca the PVC piping throughout the villages is not sufficiently buried. Over time this will result in UV decay and damage from animals. It is likely that these systems were not adequately dug for two reasons: In the case of Craras the system was connected in haste before an important event involving Federal politicians who visited. In the case of Luca the pipes were left above ground or unburied due to seasonal timing when the ground was dry and hard. It is difficult to motivate communities to dig in pipes once water is being provided.

Especially in Craras, increased water supply has led to additional environmental hazards not addressed by the GMFs. This includes mismanagement of a small number of tapstands where drainage is inadequate. Further, provision of water to toilets has led to overflow of tanks with discharge of septic into the community environs. This discharge of septic water is a significant health risk and requires solutions not currently being explored by the GMFs. Curiously, the most serious case of 'pollution' was from the government clinic.

In Craras, Luca and Uma Quic, ADRA has remediated the work of contractors where agreed standards were not met. Remediation work carried out to date is appreciated by the community and illustrates a high degree of commitment by ADRA programs staff to quality control. Examples include replacement of bore pumps and repair of toilets.

The provision of just one open well in Uma Quic is an unfortunate outcome that reflects a lack of assets mapping and consultation in the design phase. Had more time and funding been available for assets mapping and consultation, it is likely that program staff would have identified the existence of a GTZ funded GFS system in Uma Quic that was not functioning effectively due to illegal connections and lack of water provided from Viqueque township. Discussions with SAS indicate that rather than drill bores or propose open wells, it would have been better to connect the existing system to the current water source with less than 400 m of pipe. Although SAS recommended open wells, the current view is that they dry up seasonally and are inadequate during the dry season.

Given the high failure rate of bore wells in Timor Leste, it is important that SAS is involved throughout installation to ensure a line of responsibility is established and that SAS will provide support with future system failure. SAS indicated that while they were consulted in the early phase, they had little ongoing input into quality control once the project was under way. While the ongoing involvement of SAS might have increased project costs marginally, collaboration would likely have improved capacity on both sides.

In the hilly area of Uma Quic, bore wells have failed- largely due to optimistic drilling without adequate hydrological assessment. Inspection of existing springs and water sources suggests a strong need to enclose and preserve springs rather than drill for water in marginal areas.

Despite the obstacles mentioned above, the water component of the project evidences significant learning and achievements. In the author's opinion ADRA should consolidate and build on the knowledge gained. Future GFS systems can be supplemented with low-cost options such as spring preservation.

Recommendations (Water):

Future ADRA GFS projects can and should utilize Ferrous cement tanks as an alternative to expensive, Australian made steel tanks, as advised by ADRA Australia. It may be better to reduce the cost of tanks and increase the quality of bore components to limit future clogging. ADRA's decision to replace pumps with cheap, higher output Chinese pumps is defensible in light of frequent damage by power surges and lower replacement costs. Ideally, GFS systems would be installed with support provided for at least one year.

Political pressure exerted on ADRA staff in Craras prior to federal politician visits was beyond ADRA's control and the installation of piping above ground, while unfortunate, is understandable. Burying these pipes to the correct depth will depend on the influence of the GMF- a difficult task given the lack of urgency.

In future GFS projects, connection of water should be contingent on satisfactory trenching and associated works being completed by the local community. This can be achieved by scheduling digging towards the end of the rainy season. Ideally, SAS would be contracted as a quality control partner however it is conceded that the experience and motivation of SAS staff can vary.

To inspire continued volunteer management of the GFS systems, a stipend funded from community funds collected by the GMF might be considered, or possibly a project for volunteer managers (such as aquaculture). The visible reward of volunteers can be complex and divisive in communities however community consultation to explore options would be useful prior to construction. GFS projects (especially technical ones involving bore pumps) routinely fail when management committees are underfunded, are reduced to a few active persons, or stop functioning.

In future projects ADRA is advised to schedule water provision in the first half of the 3 year project cycle to provide ongoing support and capacity building for the GMFs.

Local agencies such as SAS should be given joint responsibility for overseeing independent contractors. This is especially important because SAS has ongoing responsibility for water system

management and should work with the GMFs. While the quality and commitment of SAS staff is not consistent, this should be pursued where possible.

More time for asset mapping and consultation in the design phase of the project may improve community engagement and lead to more effective solutions.

Discussion (Sanitation):

Findings:

Over the course of the evaluation more than 35 toilets were inspected. These ranged from low cost pit latrines constructed from bush materials, to more elaborate flush toilets with water, septic tanks and water. The most enthusiastic respondents about low cost toilets were women who reported increased dignity and safety (both from environmental risks such as snakes, and the harassment men).

Community mobilization in Uma Quic was especially effective despite a lack of access to water. Although community leadership was especially important in this instance, and community adoption of low cost toilets was high, it seems that low cost toilets were embraced because there were few pre-existing toilets and especially pre-existing high quality toilets to compare to. In communities (such as Uma Bot) where there were more pre-existing flush toilets, beneficiaries were more reluctant to install temporary pit toilets.

129 of the 350 low cost latrines have been built, partially due to opposition by government to use of subsidies within a CLTS approach. This resulted in subsequent delays in activity and confusion about earlier promises of subsidies. It is the opinion of the author that where subsidies have been given extensively in the past, and community use of higher quality toilets is already considerable, it would be wise to continue to offer subsidies or incentives to the poorest of families.

Although ADRA proposed to use a CLTS approach there was a lack of capacity within ADRA to use it in a pure form and a lack of support by government to apply it effectively, consistently and in a timely manner. No evidence was found of government support for ADRA's CLTS activities. CLTS is difficult, time-consuming, requires significant community mobilization and can place a burden on poor families, especially where population pressure is low.

Despite some success where local leadership was strong, many community members did not want low cost toilets and they tend to view them as a hygiene risk. Users were especially concerned about smell and flies. This is a valid concern when low cost toilets are pit latrines without ventilation and where water infiltrates or is added to the pit. Household refusal to build low-cost toilets may be seen as a rational choice given the shame and comparative cleanliness of using the 'bush.'

The most commonly cited concern of beneficiaries were that that they wanted permanent toilet structures with access to water and a flushing system.

The school toilets visited did not meet best practice standards for a school setting. In Craras, the school toilets were unfortunately built on community land rather than the school property and vandalism has been a problem. Installation of two sit toilets for dignitaries compromises their uses in

a school setting. Problems with drainage, plumbing, privacy and water provision were noted. ADRA is funding remediation to restore them to an appropriate standard.

Recommendations (Sanitation):

Ongoing consultation with government in the design and early implementation phase of CLTS is advisable. Government pressure to avoid provision of incentives in ADRA's project is consistent with best practice in CLTS however the approach in Timor Leste is recent and there is a case to provide incentives in areas where government has previously provided incentives. CLTS may be better applied in areas where there is very low toilet/latrine use and the government is willing to provide effective partnership.

Partnership with local government and local health volunteers is advisable in the community mobilization phase if a CLTS approach is adopted. There should be a coordinated series of activities after provision of water. Further, there should be a stronger emphasis on tippy taps or other means of hand washing.

ADRA staff would benefit from training in the CLTS approach prior to commencement of project activity. This could involve visits to other sites where CLTS has been applied in Timor Leste so ADRA's activities can be informed by past failures and achievements. A portion of project funding could be allocated to staff development.

It may be useful to consider low cost toilet construction in communities where toilets are scarce. In communities where there are already many higher quality toilets it might be more appropriate to provide subsidies or incentives to poor households. While there was enthusiasm for building a good toilets. ADRA might reconsider the use of low-cost toilets in low population density areas.

In general, ADRA is advised not to encourage construction of low-cost toilets in low-population density areas where water is more than 100m away and toilets are likely to become a hygiene hazard.

School toilets constructed by ADRA should be modeled after recent government toilets and construction overseen by SAS or a village based committee with adequate skill to guide the process. At this point the capability of the ADRA construction team is questionable.

Discussion (Hygiene):

Statistics provided by clinic staff in Craras and Luca indicated a 17-20% decrease in diarrhea cases in the six month period after ADRA's Hygiene 'triggering' (when compared to the six month period before ADRA's triggering. Given that triggering occurred before water supply handover, and community members boil drinking water, this shift is likely due to improved hygiene practice. The statistics were gathered from clinic record books.

Triggering meetings held in a school setting were valued by teachers and students who praised ADRA's activities while requesting follow-up and expressing the opinion that one session was not enough.

Provision of hygiene instruction was valued by beneficiaries however coverage was low within target communities and the beneficiaries spoken to typically attended one triggering meeting followed by

house to house visits by project staff to encourage them to build toilets. It is noted that in a CLTS approach the level of community mobilization would be more significant and would occur over a longer period of time. Behaviour change is especially difficult to promote.

While beneficiaries reported change in hand-washing practices, and ADRA staff gave preliminary instruction on how to make a 'tippy-tap', most low cost toilets inspected did not have a system for hand-washing. It was notable that in Craras and Luca some excellent toilets had been installed. These were flushing and had a water supply within the toilet room.

In Craras the village was very unhygienic due to large amounts of animal waste, sewage overflow and lack of animal management. ADRA was effective in mobilizing some families in these areas to build toilets however a broader emphasis on village hygiene was not evident.

Recommendations:

Ideally, beneficiaries would attend more than one triggering meeting in a CLTS process.

Ideally, ADRA would utilize a simple curriculum for Hygiene education.

Hygiene education should extend to animal management and use of tippy taps.

Recommendations (Hygiene):