



**TAKE A LOAD
OFF OECUSSE**

IMPACT ASSESSMENT

BY SALLY BOLTON • KOPERNIK FELLOW • JULY 2011

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SERVING THE LAST MILE



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Executive Summary

Kopernik connected Q Drums with 30 families in Oecusse, working with a local partner, Centro Feto Enclave Oecusse (CFEO). Kopernik Fellows Michael Woon (October 2010 - January 2011) and Sally Bolton (January – June 2011) conducted the impact assessment.

Oecusse is an isolated enclave on the north coast of Timor, bordered by the Indonesian territory of West Timor. Approximately 45 percent of Oecusse's population of 64,000 live below the poverty line. Almost every household in the enclave reports that there is at least one month each year when they do not have enough food to eat.

In January 2011, Centro Feto staff interviewed all of the 30 people who had purchased a Q Drum to create a baseline. They returned to conduct follow up surveys with each person after they had been using the Q Drum for one and a half to two months. People paid US\$10 for a Q Drum, in four monthly instalments of US\$2.50. The families who bought Q Drums live on around US\$2 per day on average.

The Q Drums have made a significant impact, by:

- **Almost halving the number** of households spending more than one hour each day collecting water,
- **Reducing by two thirds** the number of households making more than one trip per day to collect water, and
- **Almost halving the number** of households requiring more than one person to collect water each day.

Language was a significant challenge to collecting reliable survey data: surveys were designed in English, translated into Indonesian, conducted in Baikeno and recorded in Tetum, which then had to then be translated into English for analysis.

Project Background

Project Objective

Kopernik is an online marketplace connecting people in the developing world with innovative, life-changing technologies.

Kopernik partnered with Centro Feto Enclave Oecusse (CFEO) to make life-changing technologies available to people living in remote communities in the Oecusse district of Timor-Leste.

Through Kopernik's Fellowship programme, Michael Woon (November 2010-January 2011) and Sally Bolton (January –June 2011) were deployed to work closely with Kopernik's local partner organization. This report is the result of Michael, Sally and the Centro Feto teams' research on the impact of rollable water containers (Q-Drums) distributed in the region. The project was made possible by Kopernik's donors, who generously funded the cost of purchase and shipping of the technologies.

This project was conducted alongside the Light-Up Oecusse program executed by Kopernik and another partner Fundasaun Esperansa Enklave Oecusse (FEEEO).

This assessment was designed to test the following hypotheses:

Q-Drums will:

1. Save people time collecting water
2. Reduce health problems caused by people carrying heavy water containers
3. Be a more convenient way to collect water than other alternatives
4. Offer a convenient way of safely storing water
5. Result in families using more water around the house

Snapshot of Location

Oecusse is an isolated enclave on the north coast of Timor, bordered by the Indonesian territory of West Timor. Approximately 45 percent of Oecusse's population of 67,000 live below the poverty line. Almost every household in the enclave reports that there is at least one month each year when they do not have enough food to eat.

Transport to and from Dili is limited, and the cost of basic goods is higher in Oecusse than in the capital. Transport within Oecusse is also difficult, especially during the wet season when the poor condition of the roads and bridges deteriorates even further.



Common Practices Relating to Technologies

In Timor-Leste, half of the population does not have access to safe water¹. Many families live very far from a water source. Women and girls are tasked with collecting and carrying

¹ Oxfam New Zealand, Safe Water and Sanitation <<http://www.oxfam.org.nz/what-we-do/where-we-work/east-timor/safe-water-and-sanitation>>

water for daily household use over very long distances, sometimes more than six times per day. They currently carry the water in five litre plastic jerry-cans. This is a huge physical and time burden on the women.

Our Local Partner: Centro Feto Enclave Oecusse

Centro Feto Enclave Oecusse (Women's Centre of Oecusse Enclave) is a small non-government organisation (NGO) that works to combat domestic violence and advocate for the empowerment of women. As well as providing a small refuge and counselling service for women and children suffering from domestic violence, Centro Feto works with the community and other NGOs to develop strategies to overcome domestic violence and promote gender equality. Centro Feto is responsible for monitoring and implementation of the fulfilment of economic, social, and cultural rights as well as the civil and political rights for women in the Oecusse Region.

Project Implementation

The Technology

The Q-Drum is a rollable water drum designed to ease the daily burden of collecting water. The durable, donut-shaped plastic container has a capacity of 50 litres (13 gallons).



Its uniqueness lies in the design of the longitudinal shaft or central hole, through which a rope is tied, to easily pull or roll the drum across any type of terrain.

The Q Drum is manufactured from linear low-density polyethylene (LLDPE), making it practically indestructible. The longitudinal shaft also serves as a vertical support structure, providing added strength.

It has no removable handles or other metal attachments that could be lost or break. The rope used to pull the Q Drum can be repaired on the spot or, if lost, can be easily replaced.

The Q Drum is durable enough to last at least eight years with daily use.

With the Q-Drum technology Centro Feto wanted to reduce the workload of women who have to fetch water each day. Using the Q-Drum they can reduce the number of times they have to go to collect water each day, meaning they have more time to do other things. The Q-Drum is also better for their health, because they can roll it rather than carry water on their heads.

Distribution Mechanism, Pricing & Payment

Centro Feto conducted awareness raising activities in the villages where the Q-Drums were distributed with support from the Kopernik Fellow. Meetings were held with the community to demonstrate the Q-Drums and to set a price for the technology, based on the value that people placed on them and what they could afford to pay.

The Q-Drums were sold for US\$10, paid in installments of US\$2.50 over four months. The average weekly spending of the people who received Q-Drums was US\$13.

Distribution

Centro Feto submitted a proposal for the Q-Drums to Kopernik in early 2010. The project was funded by mid-2010 and the Q-Drums arrived in Timor-Leste in September 2010. There were some delays in clearing the Q-Drums through customs. The Q-Drums were eventually distributed in two villages where Centro Feto works in the Oesilo sub-district, in the mountains of Oecusse. The Q-Drums were distributed in Oe-noah in late December 2010, and in Hoinenu in early February 2011.

Adoption

The people who bought the Q-Drums have reported that they use the technology every day, usually once a day. One woman said that she can transport enough water in the Q-Drum to last her family for two or three days. The amount of time people use it for depends on how far they live from the water source, and varies from 15 minutes to one hour.

In technology adoption, one challenge has been adapting the environment to suit the Q-

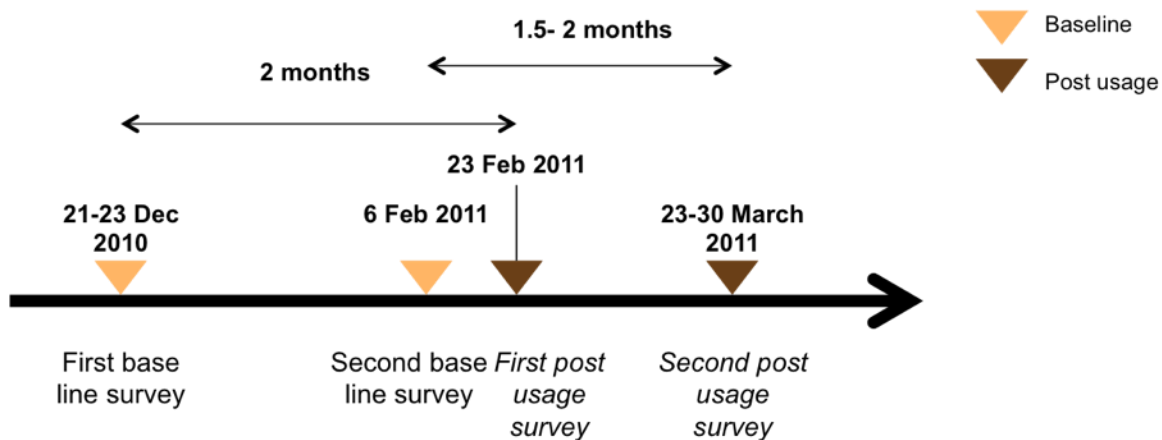
Drums. Most houses have a garden gate, to protect their corn or other crops from animals. Sometimes it is difficult to get the full Q-Drum through or over the gate and to the house. Centro Feto are planning to hold small group discussions in the villages to talk about what will work best for them to make it easier to use the Q-Drum. Training sessions will also be held on how to clean the Q-Drum.

30 households received Q-Drums, and a total of 167 people in those households have benefitted from this technology. This number includes 100 children. Previously children often had to fetch water several times a day. Now their mothers' are able to transport enough water by themselves to meet the needs of their families.

Impact Assessment

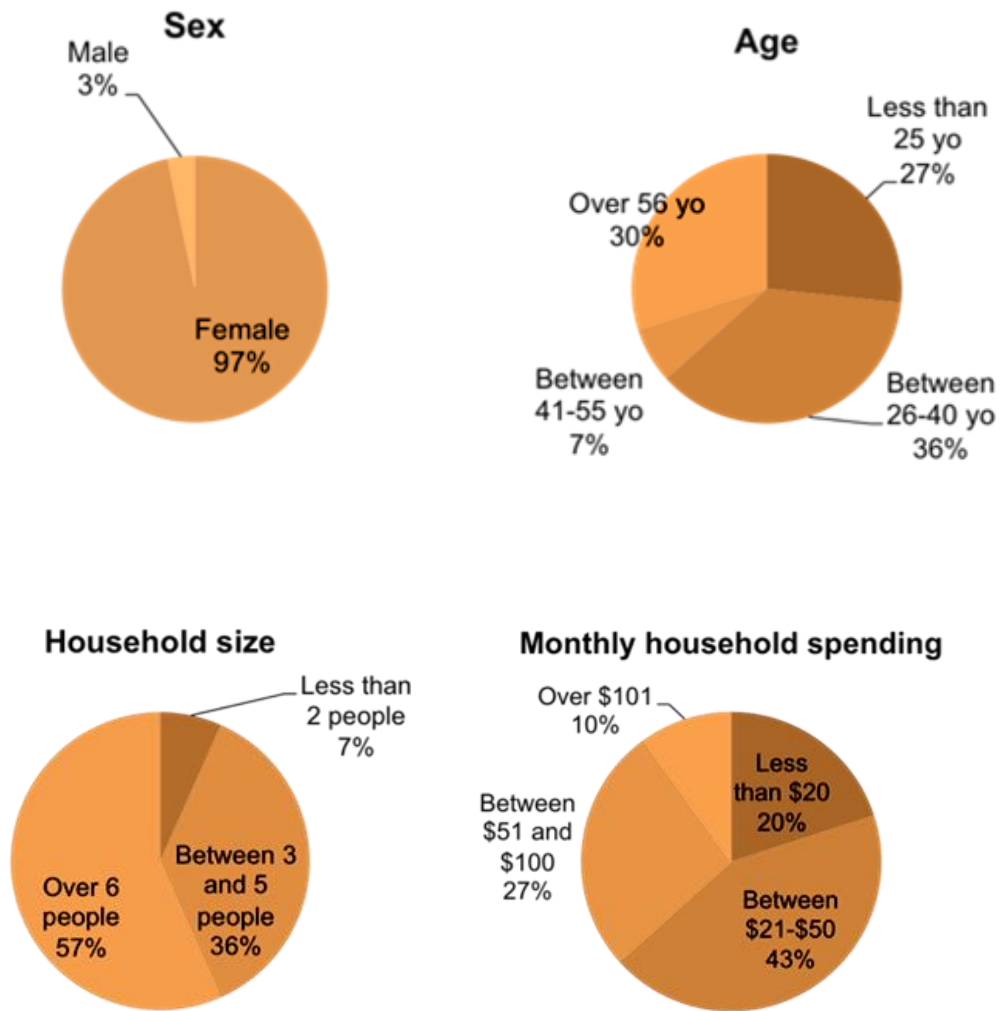
Process & Methodology

Centro Feto staff conducted baseline surveys with 30 people who purchased the Q-Drums. Follow up surveys were conducted with every person who had also participated in the baseline survey. Typically surveys were conducted after people had been using Q-Drums for between 1.5 to 2 months.



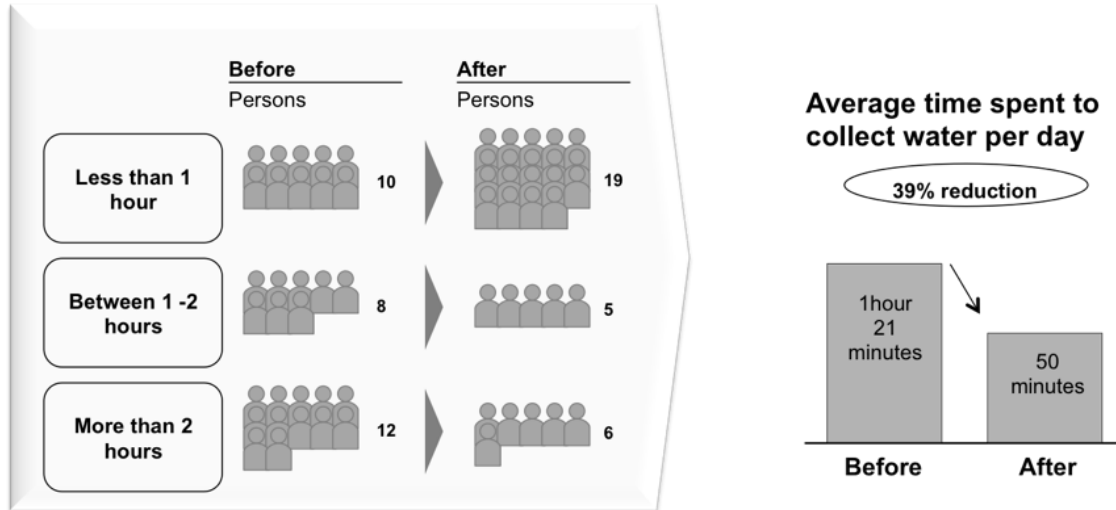
Results of Impact Assessment

Demographics



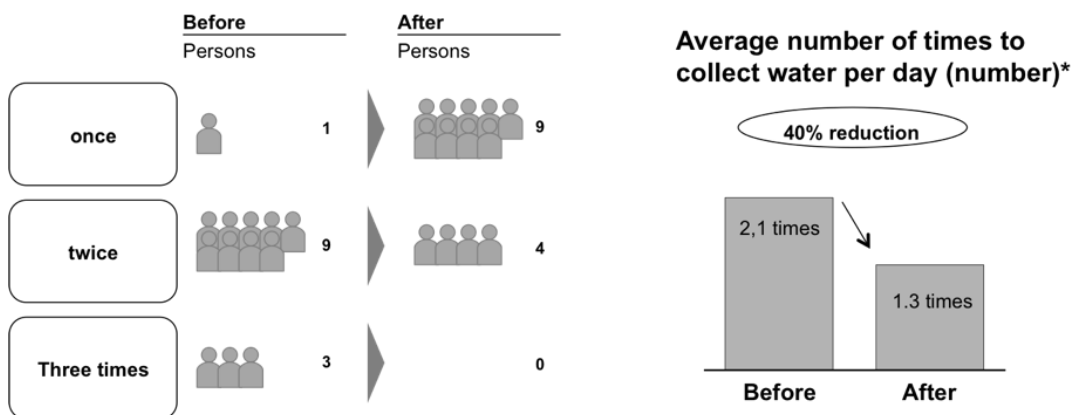
Water collection

'How many hours do you spend collecting water each day?'



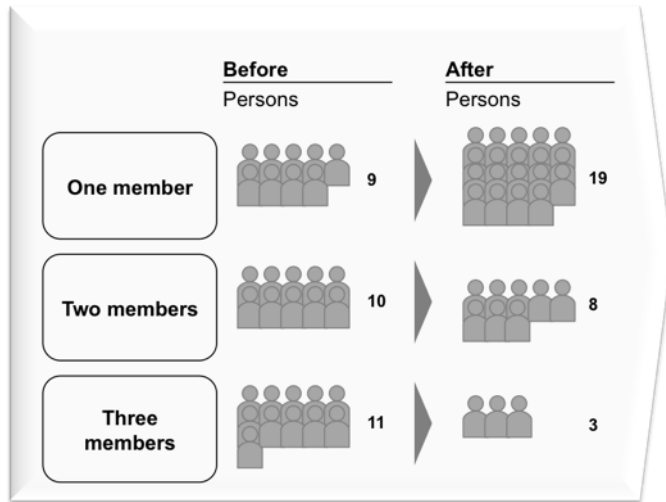
Before the introduction of the Q Drum, 66 percent of households used to spend more than an hour each day collecting water. Since using the Q-Drum this figure has decreased to 36 percent.

*'How many times do you collect water per day?'**

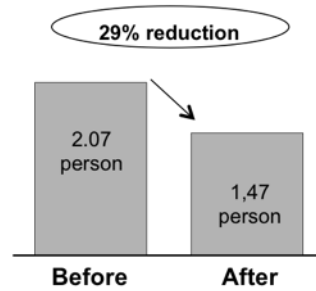


Before the Q Drum, 92 percent were making more than one trip per day to collect water. Since using the Q Drum, this number has decreased to 30 percent.

'How many family members collect water?'

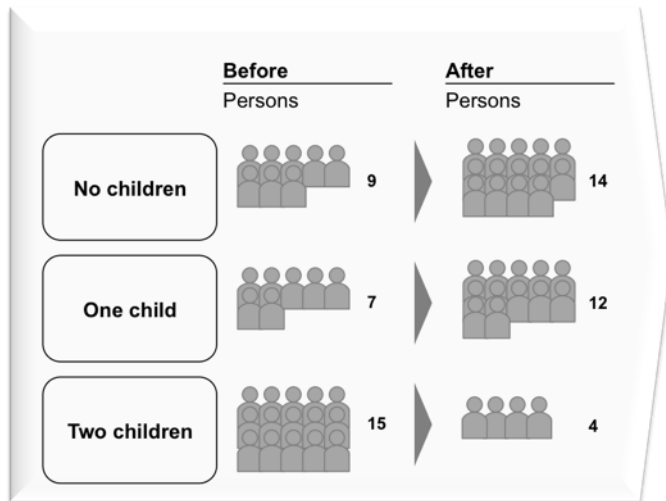


Average number of family members to collect water per day (person)

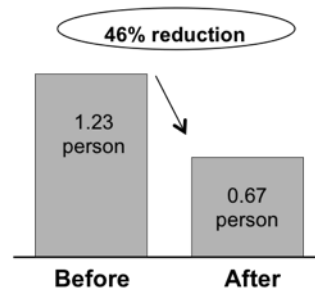


Before the Q Drum, multiple people collected water in 70 percent of households. After the Q Drum, the number of households that required more than one person to collect water dropped to 37 percent.

'How many children in your family collect water?'



Average number of children to collect water per day (person)



Before the Q Drum 73 percent of households had their children collect water. Since the Q Drum this figure dropped to 53 percent.

Conclusion

The introduction of the Q-drum technology has resulted in significant reduction of time spent collecting water, a task that predominantly affects women and children. The amount of daily time spent and the number of people required have both been more than halved. While small challenges still exist about adapting the drum to the local environment it has overall proven to be effective in this location. More studies could potentially be done to see the effect the saved time and labor will have on the lives of women and children specifically whether or not it will bring any financial or behavioral change.

Annex

Field Stories

From the field

By Sally Bolton

Three hours. It's quite a chunk of time out of your day. A whole morning's work for a lot of people: turn up at the office at 9am, switch on your computer and before you know it three hours have passed and it's time for lunch. Alternatively you can watch almost an entire Lord of the Rings film in three hours, or fly from the north coast to the south coast of Australia.

I've been told that the Nakroma ferry running at full speed could travel between Dili and Oecusse in a little over three hours, instead of twelve, but it's cheaper to run the ferry at a slower speed (and there's more money to be made from selling sleeping cabins on an overnight journey).

Three hours is also the length of time some women in Oecusse spend fetching water every day. The women we have spoken with in Oesilo, a mountainous sub-district of Oecusse, say they make up to four trips each day to collect water in plastic jerry-cans, often assisted by their children.

This is why Centro Feto Kopernik's local partner NGO, selected two villages in Oesilo to be the first to receive Q-Drums in Timor-Leste. A Q-Drum is a water-transportation device that was developed in South Africa. The bright blue cylindrical plastic drum holds 50 litres of water, and can be easily rolled by one person.



Last week we returned to Oe-noah, the village where the first 17 Q-Drums were distributed last December. It's about an hour's drive from Pantemakassar along what is probably the best road in the enclave (although this is a very relative concept).

I went with Anton and Lucia, my colleagues from Centro Feto. Anton collected the third installment of payments for the Q-Drums, which people bought for \$10, while Lucia started collecting feedback from the households who are using the drums.



The response to the Q-Drums has been overwhelmingly positive.

“The Q-Drum is great because it saves us time and only one person needs to fetch water,” said Maria Sufa. She used to spend half an hour each day fetching water with her adult daughter, but now her daughter can do it by herself in 10 minutes.



“I like the Q-Drum because it doesn't hurt my body so much,” said Agostinho Bobo. The Q-Drum was invented not only to save people time collecting water but also to reduce

injuries from carrying water long distances. Women often carry jerry cans of water on their heads, which can cause stress to their necks and back.

“I think the Q-Drum is really good because it reduces our workload,” said Esperansa Timo. She used to spend two hours each day fetching water with two of her children. Using the Q-Drum, it now takes only one hour and one person.

“It’s great,” said Domingas Safe, “because when I go to fetch water, the water I collect lasts for a long time.” She used to have to collect water every day, but using the Q-Drum she now only has to collect water every second or third day to meet the needs of her household.



Now that the distribution of this round of Q-Drums is complete, Sebastiana Pereira, the Director of Centro Feto, says that the next steps will be to ensure they are being used as effectively as possible.

“One thing we’ve noticed is that the garden gates in Oe-noah are a challenge to rolling the Q-Drum all the way to the house,” she said. The gates are needed to protect the corn crop from pigs and other animals, but sometimes this means that people need to decant water from the Q-Drum into jerry cans to get the water over the gate and to the house.

“We’re planning to conduct training on how to clean the Q-Drums, and also have some small group discussions about how to adapt the gates to make it easier to use the Q-Drums,” Sebastiana said.

Next week we will return to Hoinenu, the other village where Centro Feto has distributed Q-Drums, to collect the final instalment of payments and more feedback. If the weather is fine we should be able to ride there, meet with clients and return to Pantemakassar in around three hours. It should be a good morning's work.

