



Water as the source of community empowerment: Part 1

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It is a rare opportunity that allows the evaluation of a project over its 'design life'. This case study of two Guatemalan communities assesses the impact of their 25-year water project.

'We never stop talking about the first water project (1973-4)... the fruit of that project is where we are now, with a much more developed community in every sense.'

**Andres Toz Tay
Auxillary Mayor and
former President of the
Pampojilá community
water committee,
January 1998.**

This is the story of two adjacent rural communities in Guatemala, Panimaquip and Pampojilá, which inaugurated a piped potable water supply in February 1974. It is a story of sacrifices and of achievements, and above all of a process of community and human development that was set in motion by the community organization required for the water project. At the same time, it is the story of a water supply system that continues to function more than twenty-four years after its completion.

Rarely do the professionals who work throughout the world in the rural water supply sector, have the opportunity to evaluate the impact of projects over what is referred to as their 'design life' — normally around twenty years. The authors of this article have had a rare opportunity — two of them participated in the water project 25 years ago, and returned in 1998 to update themselves about it.

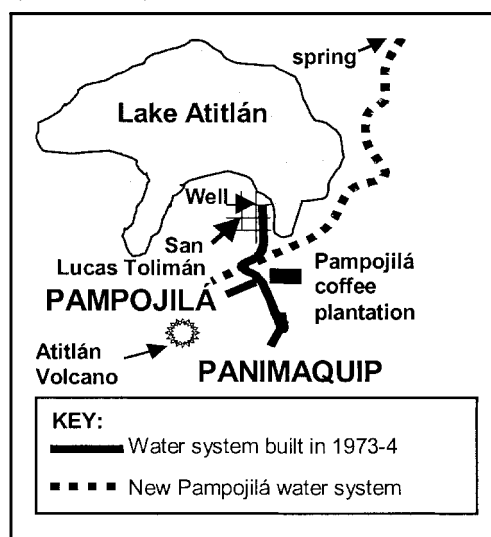
This story demonstrates that projects supporting community development are part of a complex process. Well-managed, they can have extremely positive impacts over at least a generation. To achieve such impacts, the institutions involved need to promote the organization of the communities, and need to collaborate to the fullest extent possible with such community organizations.

Another important impact should also be mentioned: the experience of some young volunteers involved in the project to assist the communities of Panimaquip and Pampojilá, became the stimulus to create an NGO called Agua del Pueblo. This NGO now works throughout Guatemala and has assisted hundreds of rural communities since the original project was completed. Based upon the experience gained in Panimaquip and Pampojilá, Agua del Pueblo has maintained a vision

which sees the introduction of rural water supplies as a means of promoting a wide range of development activities.

The authors believe that the story of these two communities is exceptionally interesting, and carries lessons that merit consideration in other projects of a similar nature. It shows how a potable water supply project can be sustainable over the long-term, and how it can lead to local empowerment.

Map of the project area
(not to scale)



The communities and their population growth

The communities of Panimaquip and Pampojilá are located in the western highlands of Guatemala, at an elevation of about 1500 metres above sea level. They are on the slopes of the Atitlán volcano, 2000 metres below its peak, and are a few kilometres from Lake Atitlán, in the municipality of San Lucas Tolimán, in the Department of Sololá.

The population is almost completely American Indian, poor, agricultural, and

speakers of the indigenous language Cakchiquel. Many inhabitants are bilingual and also speak Spanish. The people grow corn and beans for their own consumption, and coffee as a cash-crop. Nowadays, an average family in Panimaquip has an income of about \$500 per year from the coffee, although this varies with price fluctuations in the market. Incomes in Pampojilá are slightly higher since they include employment on an adjacent plantation.

In Panimaquip the population increased from 70 families in 1972, to 175 in 1998, and in Pampojilá it increased from 66 families to 250. Additionally, in 1979-80, a number of families moved from Panimaquip to create the new adjacent community of San Martín, which now has 98 families and is served by an extension to the Panimaquip water distribution pipelines. The overall population being served is now more than three times what it was when the system was designed. This can be compared to the 'design basis' population of only twelve per cent more people than in 1973, projected for a system 'design life' of only ten years.

The fact that the present population is several times the 'design basis' population, highlights the common error of underestimating future populations. The projected rate of population growth did not take into account that the combination of the water project and other community development achievements, would discourage migration away from the community, and would encourage relatives and people who had previously left, to return. Also, the reduction in infant

mortality that is likely to have resulted from the water project probably contributed to an increase in the rate of population growth (although the authors could not verify this).

The historical context

The impact of the Agrarian Reform of the period around 1950 is still being felt in Pampojilá nearly half a century later. This Reform was undertaken by a leftist, revolutionary government, whose activities (especially the expropriation of lands owned by the United Fruit Company) so upset the United States that a CIA-sponsored coup overthrew the government in 1954.

There is a coffee plantation next to the community of Pampojilá, which has the same name as the community. Up until 1974 most people lived on the plantation, where they worked as *colonos* (this term, as used locally, can be roughly translated as 'serfs'; as with serfs, *colonos* have a feudal relationship with powerful landowners). In the early 1950s, under pressure from the Agrarian Reform legislation and the corresponding threat of expropriation, the owner of the Pampojilá plantation sold a portion of his land to the government. The timing of the sale, just before the revolutionary government was overthrown, resulted in the property entering a state of legal 'limbo'— without being redistributed to the people, nor returned to the plantation owner.

In 1959 the plantation owner became concerned that the land might either be given to members of the military, as had happened with other such properties, or it might be invaded illegally by squatters. He convened a meeting with his employees and *colonos*, explaining the situation and encouraging them to request that the government give the land to them — it seems that he preferred to have the land owned by people that he believed he could control.

Most of the Pampojilá families already owned land further up the slopes of the volcano, but could not settle on it because of the lack of a water supply. After eight years of effort, provisional titles to the redistributed land were finally granted to 114 local families in 1967, each of them receiving about 0.8 hectares, although again this land had no water supply. The people continued to live and work as *colonos* on the plantation, while they

Taken in 1974, this photo shows one of the new public standpipes which revolutionized people's lives at that time.



Andrew Karp

searched in vain for a water source near their land.

In 1972, with the support of the community development programme of the Parish of San Lucas Tolimán, headed by Father Gregorio Schaffer, the people of Pampojila decided that the best solution would be to pump water from a well near the shore of Lake Atitlán, four kilometres from Pampojilá. It was also decided to include the adjacent community of Panimaquip in the water scheme. Panimaquip is about four kilometres further away, and the people there lived on their own land. They had traditionally relied on a mountain spring as their water source, but in 1971 an earth tremor reduced the flow to an insufficient amount. As a provisional and emergency response, the San Lucas Tolimán Parish had sent daily cistern trucks to provide water to Panimaquip, but this was expensive and unsatisfactory as a long-term solution.

Combining the two communities in the same water scheme would not only resolve the water needs of both, but it would result in an economy-of-scale that would bring down the per capita costs of the system. They could share the same well and the first four kilometres of pipeline.

The water project — 1972-4

The year 1972 was used for preparatory activities — organizing the communities, planning, designing the system, acquiring legal rights-of-way, and making financial arrangements to pay for the water system.

Recognition should be given to the role of the Catholic church at the San Lucas Tolimán parish, and the community development programme organized by this church. Perhaps the most significant assistance was, and still is, their sustained support and solidarity in the resolution of the problems of the people and communities in its area.

The technical solution consisted of the following:

- The water source came from a well near the shores of Lake Atitlán.
- Despite most of the homes in the communities being at a very slightly lower elevation than the pump station, pumping was needed to (a) bring the water up the well, (b) push it over a high point midway between the communities — about 40 metres higher in elevation than the pump site, (c)

bring it to the high point of the system, which was the tank serving Pampojilá, 90 metres above the pump site, and (d) overcome friction in the pipelines.

- 3900 metres of 2-inch diameter PVC piping brought the water to a point where the pipeline would split, with part of the water going to Pampojilá, and part to Panimaquip.
- Public standpipes were connected to both the distribution piping emanating from the tanks, and also directly to the conduction pipeline between the well and the tanks.

Financing labour and technical assistance was fairly straightforward since the communities readily agreed to provide all unskilled labour without pay. The San Lucas Tolimán Parish had several young volunteers who became involved with the project, led by an American engineer, Bruce Clemens. These volunteers undertook the surveying and technical design of the water system, in constant collaboration with the communities. The Parish provided room and board for the volunteers, provided an old vehicle, and paid skilled labour such as plumbers and masons.

Financing the construction materials was a challenge that was principally met with two innovative solutions. First, a large part of the funding was earned by simultaneously constructing a water supply for the Pampojilá coffee plantation, whose owner agreed to pay a somewhat low, but nonetheless commercial, price for such a system. A large part of the fee paid by the plantation was profit, since much of the labour, surveying and design work was already being provided at no cost; this profit was invested in construction materials for the community system. Secondly, the PVC pipe manufacturer, Tubovinil, agreed to sell all the pipe to the communities on credit.

In addition to these two principal sources of financing for construction materials, some small contributions were made by the U.S. Embassy, who donated US\$900, CARE, which donated US\$500, and some private individuals.

Construction work began in May, 1973, and was completed in February, 1974. ■

Part 2 of this article, on developments and events since the project was completed, will be published in the April 1999 issue of *Waterlines*.

Agua del Pueblo

In order to achieve long-term sustainability, the project was executed with a methodology that included: training of community members in both technical and organizational skills; administration of the project by the communities, in co-ordination with the institution assisting them; health education; and payment of a significant part of project costs by the communities.

This methodology eventually became the seed that matured into the policies that are still applied by the NGO.

about the authors

Andrew Karp arrived to assist the water project in 1974. He is a sanitary engineer and has continued to work on water sanitation projects since that time. He is now a consultant.

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Sayra Cabrera De León undertook the professional exercise required for her undergraduate degree within the project communities, in 1973 and early 1974. She has since earned her doctorate in Social Sciences and is a consultant on development projects in Guatemala. Contact: Tel/fax: +50 2 476 6543.

Leonel Cabrera Meza was a Guatemalan anthropologist with extensive experience in the potable water field. He passed away a few months after co-authoring this article.