

# Churches: a model for community water supply projects in Micronesia?

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Sometimes this individual resides on site—such as a Peace Corps volunteer.

## Introduction

Newcomers to Chuuk are often surprised that there can be water shortages in an area that experiences in excess of one hundred inches of rain per year. They logically wonder how this is possible if large cities elsewhere in the world manage to thrive quite comfortably with only a small fraction of this rainfall. After living on Chuuk for a while, they might discover that there are numerous springs in the mountains, some of which appear to flow all year-round. Again, very logically, they conclude that it will be a simple matter to develop a piping and pipe water from it to a tank located in a coastal village. Residents in the vicinity of the tank would have a convenient and reliable source of safe water and problems could be solved! The more ambitious of these projects would be for a distribution system that feeds water to individual homes. Indoor plumbing! This is the thought process behind the "classic" water supply project. It is all so very logical. Unfortunately, these projects rarely, if ever, work out as planned. This is a sad lesson that has been

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Let's take a look at a typical water project from start to finish. Here are the steps that might occur:

A problem is identified and discussed on the local level. This might be as simple as a man discussing household water problems with his wife or as elaborate as a formal island-wide meeting.

An outside expert or a government professional is contacted who designs a water system to solve the problem.

3. The design is discussed on the local level. This discussion would include who would benefit from the system, use of land for facilities, and whether or not there would be compensation for labor costs. Since at least hardware and construction supplies would probably be a gift, there would rarely be objection to the project. If there will be compensation for labor costs, the project would probably be welcomed even if there is little chance of it being successful in the long term.
4. Funding for the project is secured from an outside source or through a government office. This funding would at least cover hardware and construction supplies. More and more often, local labor costs would also be covered.
5. The water system is built. Frequently, this is the enthusiastic part of a project. However, on some islands, it is difficult to recruit happy labor.
6. The system operates as designed for a while. Initially, most projects are a technical success. The experts love to talk about their projects while they are still new.
7. Vandalism might occur (from a drunkard, malicious youth, a landowner feeling that he was not compensated properly, etc.). Water supply systems that use PVC pipe are most vulnerable to vandalism as the pipe is readily damaged by rocks, machetes, fire, etc.
8. The system deteriorates or a part breaks due to lack of preventative maintenance, inappropriate design, or just plain rough use. Inevitably, the system needs service.
9. No-one is available to repair the system and/or no supplies or spare parts are available for making the repairs.
10. The system stops functioning or it produces less and less water. Ultimately, it is abandoned.

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Sounds like a bleak and unrealistic picture? Unfortunately, one does not have to look very hard to find examples of it. I am tempted to cite specific ones. However, in order to be sure I do not offend, this classic example will have to suffice.

## Present approaches to water problems in developing countries

Micronesia is not alone in attempting to provide safe water supplies to its remote areas. Throughout the world, during the water decade of the 1980s, projects were undertaken with the ambitious objective of providing safe drinking water to everyone everywhere. Although this effort was not completely successful, much was learned by experience. Hind-sight is very clear! As a result of this experience, guidelines, such as the following<sup>1</sup>, are now available that will hopefully lead to more successful water projects.

1. Initiation by popular demand. This will vary depending on the number of people the project will serve.
2. Health education before, during and after the project. This is a weakness of the classic project. Frequently, no such training takes place. The primary motivation for a water project is usually the increased accessibility and/or reliability of the new water source.  
  
Improved water quality is a secondary motivation. That this is true can be seen by the fact that, when a water project fails, people will quickly revert to using traditional unsafe water sources.
3. Sensitivity to cultural factors. This is not as important a consideration as it is for sanitation projects. However, in some very traditional areas care should be taken. For example, on some of the outer islands of Yap it might be necessary to provide separate bathing areas for men and women.
4. Preliminary discussions with the community. This usually occurs, but it would be rare that a community is asked to provide input to the design process. Design is left to the experts.
5. A water committee. This is another weakness of the classic water project. Rarely is an administrative structure put in place for managing the project. The implicit assumption appears to be that the system will take care of

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itself or that it is government and the government will take care of it. Certainly women are not involved with this. There appears to be no acknowledgment of the fact that women are the primary users of water supplies. In the extreme situation, a man may only contact a water source when he takes a dip at the traditional bathing hole. Needless to say, if self interest is a factor, water supply will not be a high male priority.

6. Local involvement in construction. This is almost always the case. However, more and more often, recipients of water projects will demand labor costs. The concept that a person must be paid to accept a gift is still a foreign one to me. As indicated earlier, if a person is paid for his labor, there is the danger that what is important about the project is the money, not the project benefits. This will obviously not help project longevity.
  7. The use of appropriate technology. The technology level will probably be appropriate if supplies are purchased locally. Technical problems usually occur with pumping systems for which parts have to be ordered from off-island sources.
  8. Collection of a fee to support maintenance of the system. I am not aware of any systems where this has occurred. This is another obvious weakness of the classic system. If no money is collected, there will be no money to pay system caretakers or to buy supplies and spare parts.
  9. Appointment of system caretakers. Although this may occur on a sporadic basis, I am not aware of a project that has done this on a permanent basis.
  10. Availability of spare parts. Likewise, I am not aware of a project that has a supply of spares and repair materials on hand on a permanent basis.
- If these guidelines are valid ones, it is no surprise that the classic water supply project does not have a very high success rate. It is extremely weak in health education and in the broad area of management. Management includes setting up an administrative structure that is responsible for collecting a user fee, hiring a caretaker to operate and maintain the system, and insuring that a supply of spares and repair materials is always on hand. The growing problem of project recipients demanding labor costs is a further area for serious concern. Community water supplies in other parts of the Pacific (e.g. Tonga<sup>2</sup>) may provide lessons for Micronesia.

## The churches as a model

As one tours the outer islands of Chuuk, one is hard put to find projects that have survived for a long time. School buildings, dispensaries, even fishing boats and pickup trucks, all are victims of the same maladies that afflict our classic water supply system. The problems encountered with water projects are really the same as the problems encountered with other projects. For better or worse, water projects have simply been studied more on a world-wide basis.

However, as a person continues his tour of the outer islands, he notices one exceptional project that has, in fact, survived for a very very long time: the churches! They not only have a visible element that is successful — the physical facilities — but a non-physical element as well. Churches have become a part of the culture! They not only address spiritual needs, they perform social functions, play a role in births, marriages, and deaths, and influence numerous other aspects of daily life.

Let's take a brief look at the history of the churches in Micronesia as well as the way they operate today and see what we can learn from their example:

1. Initially, a dedicated leader resided at the project site and lived what he was advocating. This person became a permanent member of the community. He was accepted into the community even though what he was advocating disagreed with prevail-

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... must constantly educate and reeducate the population he is serving concerning the relation of safe water supplies to physical health. The educational program must be directed at men, women, and children. For better or worse, men usually make public decisions in developing countries. However, women often have a lot of power behind the scenes. Children are the men and women of the future! There cannot be too much education. A water education program is not a success until it is a part of the culture.

3. **Management:** While the leader described above is responsible for setting an example and for providing an educational program, some sort of management structure (such as a water committee) is required for project implementation, operation, and maintenance. This includes hiring of a local caretaker to operate and maintain the water supply system, stocking spare parts required, and collecting a user fee to fund these activities. The leader may play an important role on the committee. However, it is the committee that

5. An administrative group was formed to manage the daily affairs of the organization that were unrelated to its teachings. Among other things; this group managed the operation and maintenance of facilities.
6. During the Sunday workshop, a voluntary user fee was collected to provide for maintenance of the facilities and, ultimately, to assist the leader with his own financial needs.
7. Members of the community donated their time to the maintenance of the facilities.
8. Youth and other groups were formed that had social events that were somehow related to the teachings of the original leader.

Based on the experience of the churches, it may be possible to develop a new set of guidelines for water projects. Following is such a proposal:

1. **Leadership:** Water supply must have a dedicated leader who lives the principles he is advocating. This person should be a member of the community. He or she must be an example who proves that what he/she is advocating is indeed worth while. It does not matter if it is not consistent with cultural practices and or if the community has not initiated it.

This person could be a paid government employee such as an island medical corps person. A non-paid missionary might be just as effective.

2. He conducted a lengthy workshop every Sunday morning plus a shorter one every day of the week. Sometimes he conducted two workshops per day. Workshops were also held for children so that, when they became adults, they would already be familiar with the teachings of the leader. Individual instruction was readily available for slow learners.
3. As the leader's ideas became more widely implemented, he trained other leaders so that, if he should leave or die, the ideas that he was advocating would continue.
4. As these ideas became accepted and admired, he advised the people on what type of facilities would be suitable for best presenting future workshops and conducting related activities. Members of the community willingly donated their time and money to build these facilities because of the value placed on the teachings of the leader.

brings about broader community participation in a project. The committee is an ongoing entity for the life of the project.

**4. Facilities Construction:** Facilities should be constructed with unpaid local labor and every effort made to generate local funding for the purchase of construction supplies. The technology chosen for use in the project should be at a level that can be operated and maintained on the local level.

How does our classic project fare in light of these guidelines? The first problem might be lack of leadership. The newcomer, perhaps a Peace Corps worker, is not really a permanent member of the community. He may be able to serve as an example during his brief stay on an island; however, this is not long enough. Likewise he may be able to provide educational services. But, two years of them are not enough either. If these guidelines for leadership and education are valid, it is easy to see why the classic water project probably hasn't been too successful. There is little difference between these church-based guidelines and the previously listed guidelines in so far as management and construction of the water facilities is concerned.

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**Conclusion**

There are similarities and differences between the two sets of water project guidelines. They are summarized below:

Item	Type of Guidelines	
	International	Church
Leadership	No	Yes
Community input	Yes	No
Health education	Yes	Yes
Sensitivity to culture	Yes	No
Local management	Yes	Yes
User fee	Yes	Yes
Local construction	Yes	Yes
Local operation and maintenance	Yes	Yes

The “No’s” in the church model deal with sensitivity to culture and the interest in local input. This is understandable, since the churches came to Micronesia with the objective of changing beliefs. There is an important lesson in this. Perhaps it is that water educators should be less concerned with what people think and should just do what they feel is right. Assuming that they practice what they preach, it may indeed be adopted by the community even though there was initial opposition to it. The “No” in the International model deals with leadership. This does not imply that no leadership is

necessary. Rather it implies that leadership is extremely important in the church model.

Which set of guidelines is right? I guess that is still an unanswered question. However, we now have before us two models: one that is based on international experience (trial and error) and one that is based on a successful Micronesian project. There are really very few areas of disagreement. I am inclined slightly toward the church model because of its strong emphasis on leadership and education. An informed community with strong leadership is the backbone of any endeavor. Once this is achieved, constructing facilities and managing a project would appear to be a simple matter. The only thing I would add to the church guidelines is a bit of sensitivity to culture and some community input. Although the churches of 100 years ago might not have wanted to acknowledge that there might have been some wisdom in traditional spiritual practices, in the area of water supply, traditional practices might have a lot to offer!

Finally, I must admit that the proposed guidelines are very hard to follow. I have never followed them completely on projects I have been responsible for! However, I believe they are worthy of serious consideration. I will certainly be attentive to them in the future!

**References**

1. Ball C, Ball M. 1991. Water Supplies for Rural Communities. *Intermediate Technology Publications*, London. vii + 56p.
2. Finau S and Finau SA. Better accounting improve water supply. *World Health Forum*, 1983; 4: 169-171. □