

Water for the urban poor

by Paul Friedlander

Innovative efforts made by low-income communities, the Honduran Government and UNICEF have brought safe, dependable water supplies to the urban marginal areas of Tegucigalpa. The success of these projects has encouraged the communities to undertake other environmental improvements.

THE MOST HAZARDOUS water supplies and sanitation facilities are generally found in urban marginal areas; the principal victims of the diseases caused by these conditions are children. For the past two years the Honduran National Water and Sewerage Agency (SANAA), with the support of UNICEF, has been working with urban marginal settlements in Tegucigalpa to construct unconventional water-supply systems for these areas. It is a process in which the urban communities play a central role in organizing, constructing and managing their water system. The primary objectives of the work are to ensure that safe, dependable water supplies are within easy reach of homes and thus reduce the time, energy, and cost of storing water, and reduce the incidence of water-borne diseases particularly among children.

Tegucigalpa, the capital and the largest city in Honduras, has grown rapidly in the last two decades, from a city of less than 250,000 inhabitants to one of over 600,000. The majority of the population live in *barrios marginales*, literally 'marginal neighbourhoods', (marginal in both the physical and economic sense), with little or no basic infrastructure or services. Most of these areas are located on the city's periphery, either on the steep hillsides which surround the city or along unstable river embankments.

Water-supply problems

Although a safe and reliable water-supply is badly needed in these areas, a number of factors have made it

Paul Friedlander, UNICEF, Apartado Postal 2850, Tegucigalpa, Honduras.

impossible to utilize the conventional engineering solution of extending the municipal water-system to serve the *barrios*. The unprecedented growth has left the city supply-network badly overloaded, and the few *barrios* that have been connected receive water for only a few hours a day, often during the night when demand in the city is low. Many of the urban marginal areas are so distant and elevated that the cost of extending the municipal system would be enormous. Compounding these factors is the fact that, as in most of Central America, government resources are extremely limited.

The residents of many of the more than 170 *barrios marginales* are therefore dependent on water vendors who sell water from pick-up trucks by 55-gallon drums or 6-litre tins. Despite often being of poor quality and usually

not safe for drinking, the water is still expensive (US\$1.75 per drum), and the cost of buying water makes up a large part of most households' total expenses, often as much as 20 per cent. The high price of the water limits its use for personal hygiene, cleaning, and laundry: areas of major importance to good health. The irony of this situation is that the amount paid by residents for bought water would often have been sufficient to provide and sustain a piped distribution system.

Innovative efforts

SANAA recognized the need to pursue unconventional solutions to these problems, and with the help of a Pan American Health Organization-commissioned study in 1986, outlined three basic technical alternatives: self-contained systems supplied from boreholes, wholesale vending by truck and, where feasible, bulk supply of water from the main municipal system arranged through community organizations. The next challenge came when trying to transform the communities' requests for assistance and the proposed technical alternatives into tangible improvements in the *barrios*.

The first step came in late 1987 with the establishment of a special office within SANAA dedicated to working with *barrios marginales* to improve their water supply. This



'Traditional' water sources in the urban marginal areas: collecting water, often contaminated, from whatever source is available.

© UNICEF / R. Kinney

section, called the Unit for Barrios Marginales, or UEBM, represents the first time in Central America that a water and sewerage authority has established a permanent government unit responsible exclusively for providing service to *barrios*.

UEBM has worked closely with community organizations in the planning and construction of the water systems. This has involved considerable innovation and adaptation on the part of the communities and UEBM and from UNICEF, which has supplied financial support and technical assistance to UEBM since its inception. UEBM has had little precedent to work from, either in the design and construction of unconventional water-systems or in working closely with the communities.

Community initiative

Within the communities, although the need for water is a strong rallying point, the intense individualism generated by the struggle to survive in the urban marginal areas often inhibits the development of a strong sense of community, impeding group efforts. Furthermore, community organizations, such as the *Patronato*, an elected or government-appointed council, generally have little experience in the organization and management necessary for the construction and management of a water system.

In the past two years, a framework has evolved from the collaboration between the marginal communities and UEBM in the planning, construction, and management of water systems in urban marginal areas. The framework continues to develop as all involved seek the most effective ways to work within existing financial and institutional limitations. The extent of the work to date can be seen in Table 1.

The initiative for the construction of a water-supply system always comes from community organizations which have identified water supply as a top priority in the development of their community. In response to an application for assistance, UEBM conducts a preliminary investigation into the feasibility of constructing a water system. The primary criteria for determining feasibility are an adequate water source and the motivation and organization of the community.

Once a community has been selected promoters from UEBM's community liaison section meet with community leaders and help them to organize and train a water committee

Table 1. Water systems completed and planned

| Year | Water systems completed and planned | Public tap systems | Yard tap systems | Barrio population served |
|----------|-------------------------------------|--------------------|------------------|--------------------------|
| 1987 - 8 | 6 | 2 | 4 | 10,610 |
| 1989 | 5 | 2 | 3 | 15,790 |

and conduct a socio-economic survey. This survey includes practices related to water and sanitation and it forms the basis for subsequent planning.

The community's responsibilities include all non-skilled labour involved in the construction of the system, the purchase of some materials, and the operation and management of the system after completion. UEBM designs the system in consultation with the community, develops the water source, and supervises the construction. UNICEF supplies water pipes, pumps, and other construction materials. The private sector gives technical training to members of the community as part of the contract for the sale of pipes and pumps.

Technical options

Bulk supply from the municipal system, while potentially the most economical alternative in some cases has only been feasible in a few cases; thus, mainly self-contained systems have been constructed. Systems supplied from bore holes, where suitable groundwater resources exist, are preferable to wholesale vending both in terms of initial costs and of operation and maintenance costs. Unfortunately groundwater resources are very limited in many areas of Tegucigalpa, both in quantity and quality. For this reason, wholesale vending trucks appear to be the most viable solution in some areas. The water will be trucked to a cistern



The high price of water can limit its use for personal hygiene, cleaning, and laundry: areas of major importance to good health.

© UNICEF / R. Kinney

below the community and pumped to smaller tanks located above, from where it will flow by gravity. Although it's expensive, this type of system should still result in substantial savings to the community over the current cost of unsafe water, while providing a dependable supply of clean water.

Cost recovery

Both types of system require a considerable initial investment to drill and equip the wells and to purchase tanker trucks and equipment. While funding from UNICEF has played a vital role in initiating the work of the UEBM in the urban marginal areas, this type of external support can meet the needs of but a fraction of the *barrio* population. It has become clear that for these efforts to continue, a cost-recovery system is necessary that

goes beyond securing operation and maintenance and aims at a full or partial recovery of initial costs.

A revolving fund is therefore being set up to enable a greater number of *barrios* to have access to a dependable supply of safe drinking-water. The idea is that water tariffs will be set to include operation and maintenance costs and full or partial recovery of the initial costs of SANAA and UNICEF, depending on the resources of the community. The funds for operation and maintenance will remain in the community, while the recovered initial costs will be paid quarterly to UEBM over a period of two to four years.

All terms are to be agreed upon and spelled out in specific contracts before construction begins. Agreements between all parties will be signed together, giving the community insight into all relevant documents and

making it clear to the community the level of support it is entitled to from the government.

A better environment

This type of communication and understanding between urban marginal communities and the government is vitally important. Efforts to improve the environment in urban marginal areas will continue to fall far short of needs unless they can help set in motion a continuous process involving community residents, community organizations, and the government. The construction and management of water systems has, in this respect, served as an organizing point and catalyst for other community efforts. The community organization is strengthened by the success of a good water system and the increased respect earned helps reinforce the recent experience of positive change by working together. Most of the communities have gone on to try to address other community needs, such as improved drainage and excreta disposal, clean-up campaigns, garbage pick-up, and construction of a community centre or school. While the nature of urban marginal settlements differs greatly, both within Central America and other regions, it is hoped that the successful experience in Honduras can help to improve conditions in other areas. In Tegucigalpa, the level of commitment on the part of the government towards improving the quality of life in the urban fringe areas is obvious. With a strong political commitment, a creative approach, and limited resources, the urban poor can go a long way in helping themselves to build a better environment for their children.

References

1. Aasen, B., 'A brief assessment of the sustainability of the urban water and environmental sanitation project for squatter settlements', UNICEF Honduras internal document, Tegucigalpa, June 1989.
2. 'Improving the environment for child health development', *Urban examples No. 15*, UNICEF, New York, March 1988.
3. Zúñiga, J.M., 'Participation comunitaria en obras de Agua y saneamiento en los barrios marginales de Tegucigalpa', prepared for the Ninth National Engineering Congress, Tegucigalpa, Honduras, July 1989.



© UNICEF / R. Kinney

Wholesale vending by truck — expensive, but in some cases the best option.