

Developing locally appropriate water supply – going beyond wells

By George Yap, Program Director

WaterCan is frequently referred to as a well-building organization. We do indeed construct many hand-dug and drilled wells each year in Africa, but a fairer description is an “appropriate technology promoting” organization.

In order to choose the most appropriate technology a feasibility study of all water supply options is required. To do this, we work closely with our African partners to identify the most suitable option for a given situation that will provide drinking water in a cost-effective and sustainable manner. Admittedly, this is no simple task since various criteria need to be considered including environmental, socio-cultural, technical, and financial/institutional issues.

The following table summarizes some examples of water supply technologies commonly found in WaterCan-supported projects:

Water technology	Description
Rain water catchment systems (RWCS)	Collecting and storing rainwater for drinking water has great potential in areas where rainfall is abundant. Corrugated metal roofs, such as those found at schools and health clinics are ideally suited for RWCS. Various materials can be used for the collection tank including ferro- cement, and plastic. Often, RWCSs cannot supply rain throughout the entire year in which case alternate sources may need to be identified during the dry season.
Protected springs	Springs occur when groundwater emerges from the ground, either by gravity or under pressure (artisanal springs). At sites where water does not flow at a sufficient rate to meet peak usage by villagers, a water storage chamber (spring box) can be constructed to increase discharge rates at the water collection point.
Wells	Hand dug wells can be dug to depths of 20-30 metres depending on soil conditions. Boreholes, while comparatively more expensive to develop, can be drilled in consolidated (compacted, rocky) soil and can reach deeper groundwater compared to hand dug wells. Hand dug wells are often constructed with local personnel and materials, while boreholes typically require special equipment to be brought in.
Hand pumps	There are literally hundreds of hand pump models in existence. Through trial and error over the past 2 to 3 decades, some of the most reliable, field-proven models are promoted by local authorities and agencies. WaterCan promotes “village level operation and maintenance” (VLOM) type hand pumps that allow most simple operation and maintenance procedures to be done by trained local people.
Small scale municipal water supply	In many of the slum settlements where WaterCan works, the existing municipal water network is extended into poor neighborhoods. These communities are often literally at the “end of the pipe” and it is common for water to be available only for several days during the week. The inclusion of large water reservoirs in design plans helps to address this problem.

Regardless of the water supply technology selected, all WaterCan supported projects include the establishment and training of local water committees composed of women and men who operate and maintain the facilities on behalf of the community. Our experience shows that communities that are actively involved in the planning and implementation of their water supplies will result in more robust and sustainable systems. However, this can only happen if local authorities and agencies like WaterCan are committed to their roles as facilitators rather than service providers.