

Manual well drilling

The Needs in Africa

Achieving a safe and sustainable water supply in Sub-Saharan Africa is a daunting task because the magnitude of the problem is ever increasing. Worldwide there are 663 million people without access to potable water. In order to reach these people, radically different approaches are needed and more emphasis will need to be placed on solutions that are affordable and that will allow households and communities to satisfy their need for potable water. Low-cost manual drilling has demonstrated its effectiveness in Asia, Africa and Latin America as a means of increasing the availability of potable water in areas that are difficult to reach and lowering investment costs of wells.

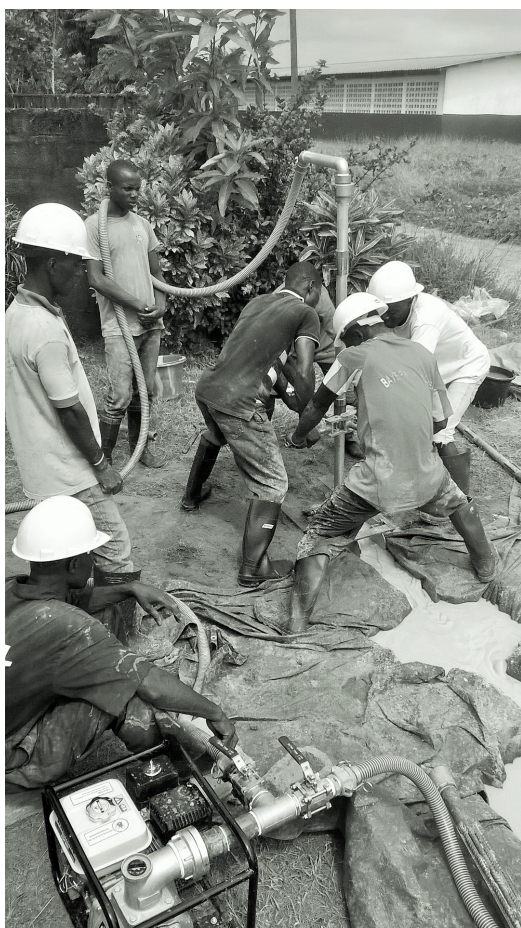


Photo:

Rotary jetting

Building Private Sector Capacity

The manual drilling techniques are not new. It has been used for centuries in Asia. The innovation lies in the private sector approach that is fundamentally different. It builds the professionalism and the private sector's capacity by providing the tools and the knowledge to respond to demand. In order for small enterprises, often still in the informal sector, to be able to respond to demand from NGOs, governments, local communities and individuals for improved drinking water, they need to upgrade their skills, both technical and managerial. This requires training and coaching over a period of several years to ensure that they can provide consistently high quality installations.



Photo: Training and coaching

Manual Drilling: Another Option

There are many advantages for manual drilling:

- Cost effective option: 2 to 5 times cheaper than a machine drilled borehole of the same depth and quality;
- Ideally suited to serve small, remote rural communities where other options are simply not economically feasible;
- Light weight equipment allows drillers to access sites away from the paved road providing opportunities for areas that cannot be reached by conventional drilling rigs;

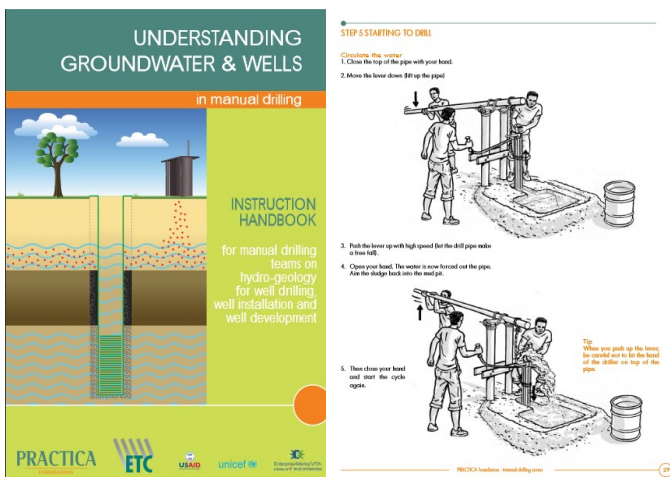
- Tools can be made and maintained locally, high end off-the-shelf kits available for emergencies;
- Low initial investment required for an enterprise to begin operations;
- Manual drilling creates employment by substituting labour for capital investment and employing local enterprises rather than foreign contractors;
- Ready-to-go in emergencies and in unstable countries (light equipment can be transported in a pick-up truck);
- Can be used for both drinking water and irrigation ;
- Saves time compared with lined hand-dug wells.



Manual drilling—Sludging

Implementation and Training Manuals

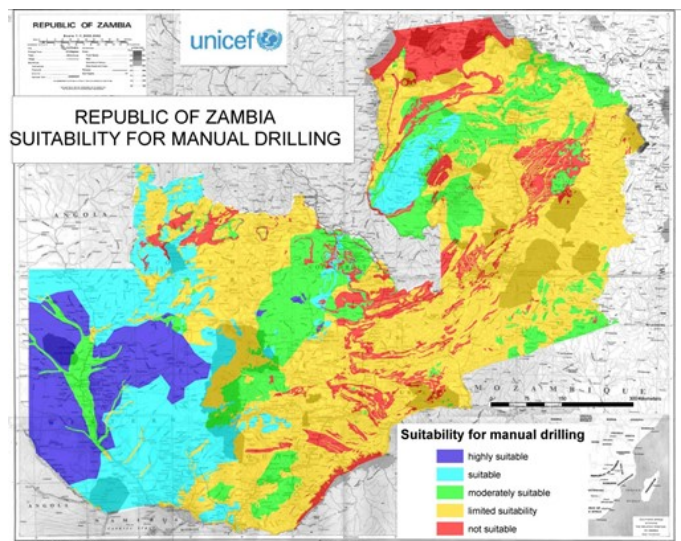
Training materials and guidelines have been developed to assist local enterprises, NGO's and national governments to implement and scale-up local capacity and introduce standards and quality control. A toolkit is available with manuals on: Groundwater and Wells, Manual Drilling Techniques (rota-sludge, augering, jetting and manual percussion), Business Training, Financing options, Water quality and Well Development.



Manuals with step by step instructions

Mapping the Potential for Manual Drilling

Manual drilling is suitable for well construction up to 40 meters deep in unconsolidated formations that consist of loose sand, silt, clay or thin layers of small size gravel. The potential for manual drilling has been mapped in 13 countries based on available data including hydrogeology, drilling logs and satellite images. These are cross referenced with suitability forms. This provides a clear indication of the areas with the highest potential to benefit from the 2 to 5-fold cost savings that can be realized with manual drilling.



Zambia—Mapping favorable zones for manual drilling

What can we do for you?

Training programmes are at the core of our activities and build on both technical and business skills for local enterprises to run their business independently. We can support NGO's with various tailor made training programs as well as strategic advice to bring manual drilling to scale.

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