

Manual drilling

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[Jump to navigation](#) [Jump to search](#)

[Africa Groundwater Atlas](#) >> [Resource pages](#) >> [Developing groundwater resources](#) >> [Groundwater Development Procedures](#) >> [Borehole Drilling](#) >> Manual Drilling

Please cite page as: Africa Groundwater Atlas. 2019. Manual Drilling. British Geological Survey. Accessed [date you accessed the information]. *Weblink*.

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Manual drilling refers to several drilling methods that rely on human energy to construct a borehole. It is appropriate in some hydrogeological environments, where aquifers are shallow and unconsolidated (and therefore easier to drill through) and depth to groundwater (depth to the water table) is shallow. The equipment needed can relatively easily be transported to remote areas. In some ways it is a traditional technique, but the equipment and methodologies have been updated. Modern manual drilling methods are used to provide water for drinking and other domestic needs in at least 36 countries around the world, and in some places are already well established.

When done effectively, manual drilling can reduce drilling costs and increase cost-effectiveness of groundwater development programmes, compared to the costs of drilling using motorised rigs.



Resources to support manual drilling

UNICEF and [RWSN](#), with other partners, have produced a series of [resources for manual drilling](#), to support the effectiveness and professionalisation of manual drilling programmes.

UNICEF: [Manual Drilling Toolkit](#)

This [manual drilling toolkit](#) is designed for African countries wishing to improve the professionalisation of manual drilling. The toolkit includes:

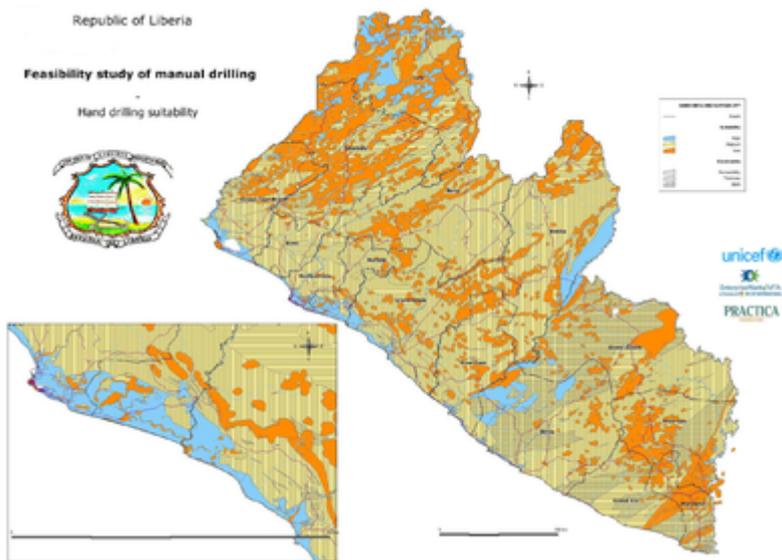
- Technical notes

- Technical manuals, including the detailed report [Professionalizing the Manual Drilling Sector in Africa](#) (2010); and a [Manual Drilling Compendium](#) produced by RWSN in 2015.
- Case studies on the implementation of manual drilling in different countries, including Chad and Nigeria.
- [Maps showing areas likely to be appropriate for manual drilling](#) for 12 selected countries. With this is an accompanying report for each country on how the maps were developed. There is also an [overview report](#) (in French / en français). The countries for which maps are available are: Benin, Central African Republic, Chad, Cote d'Ivoire, Liberia, Madagascar, Mali, Mauritania, Niger, Senegal, Sierra Leone and Togo.
- Advocacy materials, including videos.
- Recordings of five interactive [webinars](#) run by RWSN in 2014 on the subject on manual drilling.
- A number of other reports, including [Professionalising Manual Drilling](#) (2013).

Many of the materials are available in both English and French.

RWSN: [Manual Drilling Resources](#)

- On RWSN's website is a very [short introduction to manual drilling](#).
- RWSN produces the [Manual Drilling Compendium](#) (also in the UNICEF Toolkit, above) which provides a useful overview of the impacts and challenges of manual drilling, and support for improving practices on the ground.
- An RWSN webinar, [Manual Drilling - a global perspective of local realities](#), gives an overview of manual drilling and how the technology has been adopted around the world. This is as well as the five interactive [webinars](#) in the UNICEF toolkit, above.
- Manual drilling [case study videos](#) from Chad, Guinea, Niger, Nigeria and Uganda, in English and French.
- Reports on [Professionalising Manual Drilling](#) in Guinea, Malawi and Uganda (2013).



Liberia: areas likely to be suitable for manual drilling.
 Image courtesy of [UNICEF / EnterpriseWorks/Vita / PRACTICA Foundation](#)

Return to: [Africa Groundwater Atlas](#) >> [Resource pages](#) >> [Developing groundwater resources](#) >> [Groundwater Development Procedures](#) >> [Borehole Drilling](#)

Retrieved from 'http://earthwise.bgs.ac.uk/index.php?title=Manual_drilling&oldid=41401'
 Categories:

- [Additional resources](#)
- [Africa Groundwater Atlas](#)

Navigation menu

Personal tools

- Not logged in
- [Talk](#)
- [Contributions](#)
- [Log in](#)
- [Request account](#)

Namespaces

- [Page](#)
- [Discussion](#)

Variants

Views

- [Read](#)
- [Edit](#)
- [View history](#)
- [PDF Export](#)

More

Search

Navigation

- [Main page](#)
- [Recent changes](#)
- [Random page](#)
- [Help about MediaWiki](#)

Tools

- [What links here](#)
- [Related changes](#)
- [Special pages](#)
- [Permanent link](#)
- [Page information](#)
- [Cite this page](#)
- [Browse properties](#)

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- [About Earthwise](#)
- [Disclaimers](#)

