

1 Access to groundwater - Hand dug well

1.11 Mzuzu drill, Tube bailer



Description:

In softer soils with water levels of 8 meter or less a tube well can also be made with a the Mzuzu drill using a soil punch and bailer.

Advantages compared to SHIPO drilling:

- Is much cheaper;
- Less tools and skills needed;
- Easier to see the soil coming out.

Disadvantages compared to SHIPO drill:

- Can not go as deep;
- More difficult in hard soils less percussion force.



Information:

- With a soil punch and tube bailer, tube well can be made in areas with soft, sandy soils.
- With a bailer on a tube, sand is pumped out and the PVC pipe (screen) goes down.
- Cost depends on soil type, length of screen and diameter of casing.
- Cost indication for a 6 m deep tube well, 3 inch casing: **USD 50 - 200** (excl.pump).
- Cost indication complete system (6 m deep well, 3 inch casing, concrete cover, rope pump Model 2): **USD 150 - 350**.
- Producers: Information SMART Centre Malawi.



Top photo: Using a soil punch to make a hole until the water level. The pipe of the punch can be made longer with smaller (light weight) pipes so total length can be 8 meters.

Middle photo: Emptying the soil punch. The soil punch consist of a 2 inch pipe with a slot in the length and hard steel teeth. A hole can be made until the water level. When reaching the water layer, the punch does not lift the wet sand anymore. Than a PVC casing is put into the hole and tube bailer is used to make the hole deeper and lower the PVC pipe/filter screen.

Bottom photo: Sand and gravel removed by the tube bailer.