

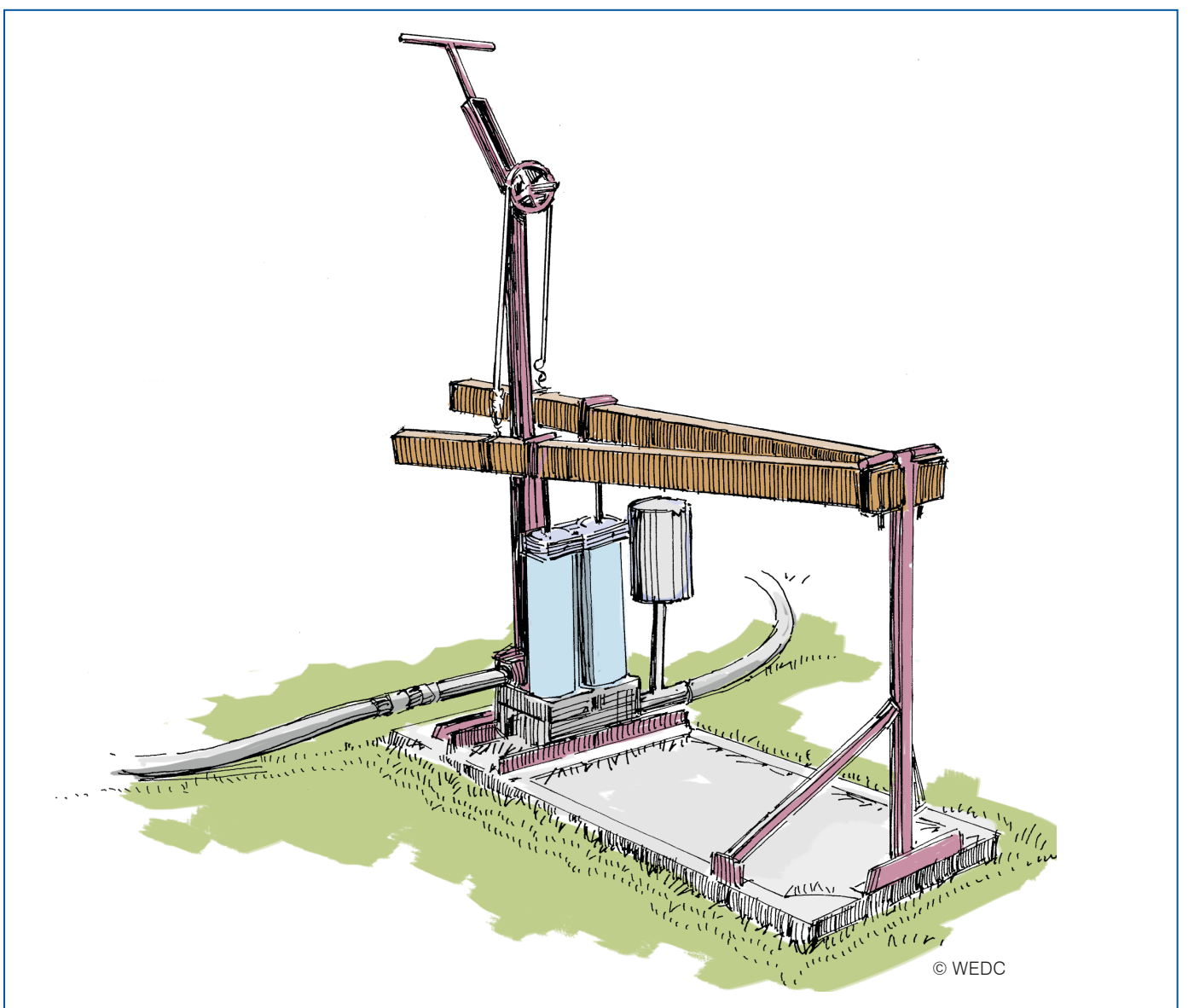
The Treadle pump

The Treadle pump, also known as the Tapak pump, is a human-powered suction pump that sits on top of a well and is used principally for irrigation. It is designed to lift water from a depth of seven metres or less. Pumping is activated by stepping up and down on a treadle, which are levers, which drive pistons, creating cylinder suction that draws groundwater to the surface.

How it works

First used in Bangladesh, it can be used in similar situations to the Rower pump. The use of stronger leg muscles, however, means that this design is less tiring to use than a Rower pump and also has a higher potential output.

The pump has two cylinders and pistons that are joined into a single suction pipe. Above each cylinder is a beam that is hinged at one end and at the other connects to a piston. The beams have a cable which connects them and passes over a pulley. The operator stands with one foot on each beam and transfers weight first to one then to the other. As one piston goes down, the other rises. The result is a very simple and very effective water pump.



Types of treadle pumps

There are two systems of pump available. One is a basic pump that can draw water from a depth and discharge it straight from the open top of the cylinders to flow by gravity directly into a low tank or open canal. The other is an enclosed cylinder system that can raise water to a height of up to 12 metres above the operating level.

Manufacture

Although the construction process of both treadle pumps is more complex than the rower pump, manufacture has been taken up by a number of small-scale industrial companies and many entrepreneurs in a number of countries produce the pump for sale. A useful guide *How to Make and Use the Treadle Pump* is available from Practical Action Publishing.