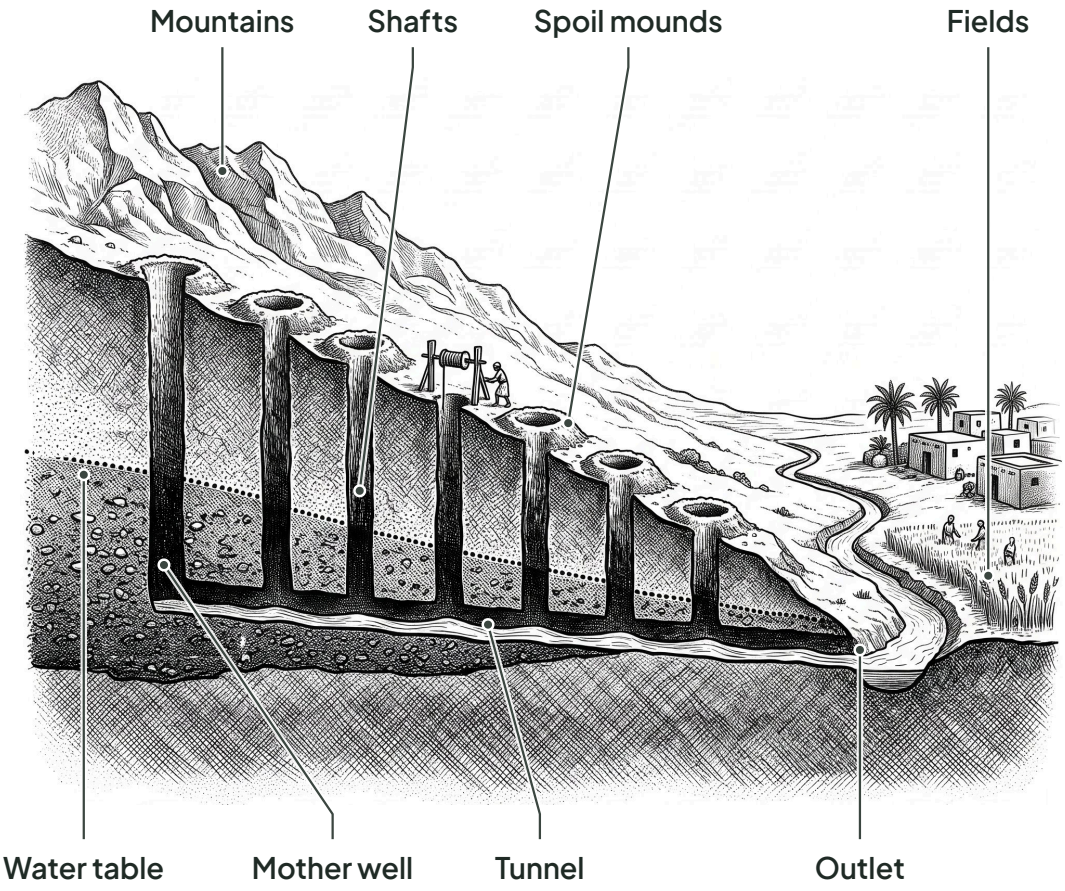
HOW A QANAT WORKED

Little rain falls on the Iranian plateau, but snow melts in the mountains and soaks into the ground. A qanat brought that underground water out to the fields. Diggers sank a deep test well at the foot of the mountains, then dug a long tunnel up to it from the plain, sloping gently. Gravity moved the water, with no pumps. Many qanats still carry water in Iran today.



THE PARTS

Mountains Snow and rain fall on the mountains and soak into the ground, filling the gravel and soil at their foot with water.

Water table The top of the wet underground layer. Below this line, the ground is full of water.

Mother well The deepest well, dug first at the foot of the mountains, down below the water table where water seeps in.

Tunnel A narrow passage running from the mother well out to the plain. It slopes gently downhill, so water flows by gravity, slowly enough not to wash the tunnel away.

Shafts Vertical holes dug down to the tunnel every so often. Workers climbed down them and hauled up earth, and they let in air and light.

Spoil mounds Rings of dug-out earth piled around the top of each shaft. From a hill they look like a line of craters across the plain.

Outlet The place where the tunnel reaches the surface and the water comes out into an open channel.

Fields Barley, wheat, gardens and date palms watered by the channel, with a village beside them.