



KĀRIZ

KĀRIZ, underground irrigation canals, also called *qanāt*. The Classical, Eastern (e.g., *Khorasan*, *Baluchistan*, *Afghanistan*), and Middle Persian form *kārēz* (< *kār*- “to draw furrows” and *rēz*- “to flow”) will be used in this article. In official Iranian administrative parlance, the Arabic term *qanāt* has become the preferred technical term (see below).

The *kārēz* conducts water from the level of an aquifer to the open air by means of simple gravity in order to distribute it to lower areas. This technology is primarily used for irrigation (*ābyāri*) and allows for the cultivation of approximately 1,500,000 hectares worldwide, or about 0.6 percent of the total irrigated surface area (Balland, 1992a, p. 1). Underground water channels originated in the highlands of Iran and Afghanistan, where until today they have remained the preferred irrigation technology.

i. *Terminology*.

ii. *Technology*. (1) Grade. (2) Length. (3) Vertical shafts. (4) Construction. (5) Channel worker.

iii. *Economic and social contexts*. (1) Water supply. (2) Geographical characteristics. (3) Social implications.

iv. *Origin and dissemination*. (1) Pseudo-kārēz. (2) Mining technique. (3) Agricultural uses in the Iranian lands. (4) Agricultural uses outside the Iranian lands. (5) Physical constraints of kārēz diffusion.



v. *Kārēz in the late 20th century and their prospects.*