



KĀRIZ I. TERMINOLOGY

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As noted above, *kārēz* is the established term for underground irrigation channels in eastern Iran. For early uses of the word *kārēz* in New Persian poetry and other literature, see references in Dehḵoda (XXIV, pp. 156-57); compare also Manichean Mid. Persian qhryz (Henning, p. 84), Persian *kahrēz* (Dehḵoda, XXV, pp. 421-22). In the pre-Islamic period, reflected in Pahlavi legal texts, only the term *kahas* occurs in the discussion of irrigation channels (texts: Pagliaro; Menasce; Macuch, pp. 549-59 with commentary; see also Briant, p. 18, n. 19; cf. G. Lazard in Goblot, 1979, p. 20, n. 48). Possibly *kahas* denoted—besides or instead of “underground channel”—a surface watercourse (as it does in *Frahang ī pahlawīg* 3.4, analyzed in Nyberg, p. 64, and Henning, p. 91). A similar range of meanings may be found for Syriac *qtātā* (R. P. Smith, p. 524), which H. S. Nyberg (p. 64) regarded as the source of the Middle Persian word. An ancient term ancestral to Persian *kārēz* might be suggested by the name of a legendary Arabian river Corys. Herodotus (III.9), in his narrative of the Achaemenid [Cambyses II](#)'s Egyptian campaign, relates a story about water being piped from the Corys into cisterns (discussed in Briant, pp. 28-29).

The term *kārēz* also is commonly used for underground water channels in Central Asia, Afghanistan, India, and China, and became a loanword in Russian (*kyarez*) because of its use in the Turkic languages of Central Asia. In



southern Kazakhstan (Deom and Sala), *kārēz* is used for artesian well systems, which harness the natural upward pressure of the groundwater, but these wells have nothing in common with drainage channels. The term *kārēz* was further spread because it was adopted as a technical term by Russian and British administrators. *Kārēz* is occasionally used in the western part of the Islamic lands, particularly in western Arabia as far as the region of Jeddah (Goblot, 1979, pp. 107-8; Planhol, 1992, p. 138), where its use attests to Iranian cultural influence, dating probably from the great Arab-Iranian cultural synthesis of the 'Abbasid caliphate (750-1258).

In central and western Iran, the Arabic word *qanāt* (pl. *qanāthā*, or less commonly *qanawāt*) was naturalized in connection with the spread of Arabic which followed the Islamic conquest of the 7th century CE. The term may go back to use in the Near East well before the Persian conquest in the 6th century BCE (cf. the Biblical town of Kenath, Num. 32:42, 1 Chron. 2:23). *Qanāt* and the related noun *moqanni* ("canal worker," 3rd pers. sing. m. active participle of *qannā* "to dig a canal") are nowadays well established in the official Persian-language literature and administrative records of contemporary Iran. But originally, as well as today, the term specifically refers to all types of open-air water channel.

In the Arab lands, irrigation terminology is particularly fluid (Balland, 1992a, p. 4), and a number of regional and local terms are used in addition to *kārēz* in western Arabia. In the Syrian desert, *qanāt* refers to underground water channels (Kobori, 1980), while in Oman *falaj* (pl. *aflāj*; lit. "crack, crevice"), in Hadramaut *mi'yān* (cf. *mā'*/*miā'* "water"), in Yemen *ḡayl* (pl. *ḡoyūl*, *aḡyāl*), and in Hejaz *kayf* (pl. *kyof*) are used. The term *foggara* (pl. *fegāgir*; cf. Ar. *fajara-hū* "to create a passage for something, to let something flow") is known nearly everywhere in the Algerian Sahara, although *bongbini* (pl. *bongbiniu*) and *kaṭṭāra* (pl. *kaṭāṭer*) are more common in Tabelbala and Morocco, respectively.

The use of the term *qanāt* has spread eastward and is now also found in regions in which *kārēz* used to be the dominant term for underground water channels. Daniel Balland (1992b, pp. 97-100) has carefully analyzed and mapped the phenomenon in [Afghanistan](#), where he found 94 toponyms formed with *qanāt* and 340 formed with *kārēz*. While *qanāt* has an advantageous literary connotation among Afghan functionaries, most of whom are native speakers of Persian, the term is used as much in the Pashto linguistic sphere as in the Persian-speaking areas of western Afghanistan. Toponyms with *qanāt* are particularly numerous in the region of Kandahar



(Qandahār) and in the west around [Herat](#), up to [Farāh](#) in the south, although isolated examples occur as far southeast as the neighborhood of [Ġazni](#) and to the south of [Kabul](#). This distribution illustrates that the introduction of the term has been the result of an acculturation whose foci were the great cities Herat and Kandahar, since they belonged to the cultural and political sphere of Iranian influence until the 19th century. In contrast, in the Afghan east around Kabul, which was always more oriented towards India, the introduction of the word *qanāt* has met with resistance. This weakness of the Iranian influence is illustrated by the absence of toponyms with *qanāt* in the area between the [Farāhrud](#) and the [Helmand River](#). Afghan administrators continue to actively support the use of the term *qanāt*, notably on topographic maps and in the fiscal registers as far southeast as the province of Ġazni. Yet the farmers of the region only use the term *kārēz*.

In the international scientific literature, the term *qanāt* remains widely predominant, although some authors, such as Mansur Seyyed Sajjadi, G. B. Cressey, and Johannes Humlum, use *kārēz* alone or concurrently with *qanāt*. Francophone authors such as A. Cornet, Iwao Kobori, and Jean Bisson use the term *foggara* for the Sahara. Noteworthy is that older francophone authors such as Richard Thoumin (b. 1897) and Jacques Weulersse (1905-46) employed *foggara* for the Syrian Levant, where the population did not use the term at all.