Because Islam arose and developed in a desert area where water resources were extremely important, Muslim sources and scholars have much to say about the ownership and transfer of water and of land tenure. The environment, however, was not the only reason for this. It was also connected with the nature of Islam as a monotheistic religion that sought to regulate the behaviour of humans according to the commands of Allah.

Before the Prophet Muhammad, in the *djahilyya* or "period of ignorance," water regulations were not established in Arabia. Wells belonged either to an entire tribe or to an individual whose ancestors had dug it. In either case, the tribe or the individual proprietor of the well charged a fee to all strange tribes who came to draw water for themselves or their animals (Caponera 1973). In the south of Arabia where water was plentiful, ownership was individual and was even divided up into infinitesimal allotments. Selling water was a common practice. In general, however, water was scarce for the settled populations and the nomads, and its possession was the object of many bloody struggles: force made the law.

The Prophet Muhammad, on the other hand, preached charity as the principal virtue, inasmuch as it involved helping the unfortunate and showing detachment from material things. Thus, starting from this general principle and according to the word of Allah that "Then shall anyone who has done an atom's weight of good, see it! And anyone who has done an atom's weight of evil shall see it,"¹ the sharing of water appeared to the Prophet to be an act of religious charity, and subsequently became in most cases a legal obligation. The Prophet also declared that access to water was the right of the Muslim community – no Muslim should want for water – and the Holy Quran has sanctioned this with the general formula: "We made from water every living thing."²

Furthermore, the Prophet Muhammad declared that "Muslims have common share in three (things): grass, water and fire"³ and, to prevent any attempt to appropriate water, he prohibited the selling of it (Yahya ibn Adam 1896, 75): the specific *hadith* related to this states, "Allah's Messenger forbade the sale of excess water."¹ On the basis of these later *hadiths*, some authors came to believe that the Prophet had established a community of water use among men (Van Den Berg 1896, 123).

It was to prevent water from being seized and hoarded by one person that the Prophet endeavoured to ensure that all members of the community had access to water. On his advice, Othman bought the well of Ruma and made it into a *waqf* (a usufruct or collective property for religious purposes and public utility) for the benefit of the Muslim community).³ He also proclaimed that high-lying areas should be irrigated before
lowlying areas; and to prevent the hoarding of water, he ordained that the quantity of water retained should not reach over the ankles.\(^6\) In addition, the Prophet recognized that the ownership of canals, wells, and other water sources entailed the ownership of a certain area of bordering land or *harim* on which it was forbidden to dig new wells so as not to damage the quality or lower the quantity of the water in the existing ones (Yahya ibn Adam 1896, 75).

Besides these fundamental revelations which are universally recognized by Muslims of all rites, sects, and schools, other principles are found in later hadiths, the genuineness, or at least the interpretations of which have been contested. Scholars of the two major branches of Islam, the Sunnites and Shi'ites, by interpreting the inner meaning of the Prophet Muhammad's prophecies, sought to adapt the principles to local exigencies arising from more complex situations – in particular issues relating to the right of thirst, to irrigation, and to the sale and transfer of water and land.

**The right of thirst**

The right of thirst is juridically the right to take water to quench one's thirst or to water one's animals. This right is recognized to both Muslims and non-Muslims.

According to the Sunnites, the right of thirst applies to water everywhere (Al-Wanscharisi 1909, 283).\(^2\) This principle, however, may be considered as being one of public utility, depending on the category to which these waters belong. The three main categories of water (private goods, restricted public goods, and public goods) in Sunnite doctrine are outlined in the chapter by Kadouri, Djebbar, and Nehdi in this volume. In Shi'ite doctrine, on the other hand, the right of thirst is limited to public waters (unowned waters, sources, and wells). In the case of privately owned waters, no one other than the proprietor is entitled to their use, and whoever takes of this water must return an equivalent amount (Querry 1872, arts. 69–73).

**Irrigation**

In Sunnite doctrine, community rights apply only to large bodies of water (Ali ibn Muhammad 1903–8, 313). A distinction must be made between lakewater, which can be used for all irrigation purposes without any objection; riverwater, which can be used for irrigation provided that it does not harm the community; and rainwater which, falling on land without an owner, is at the disposal of anyone for irrigation. The owner of the nearest cultivated plot has first priority. If there are several cultivated plots near the water, no order of priority is observed; however, the owner whose crops are most urgently in need of water takes first turn (Ahmad ibn Husain 1859, 900; Khalil ibn Ishak 1878, secs. 16.1, 20.2, 20.3).

Irrigation rights of private individuals may involve acts of individual appropriation, and in Sunnite jurisprudence are subject to different rules depending whether the rights are over small rivers where the water must be stored to raise it to the required level, canals, wells, or springs and rainwater.
For small rivers where the water must be stored to raise it to the required level (Ali ibn Muhammad 1903–8, 313 and 322), two general principles govern irrigation rights. When water is scarce, upriver pieces of land are irrigated first, but the quantity of water retained should not reach above the ankles; otherwise one can irrigate as much as one likes (Khalil ibn Ishak 1878, secs. 19–21).

Concerning the quantity of water that the owner of an upriver plot should return to a downriver plot for irrigation, the Shafi’i consider that only the surplus water (that which remains standing in his fields after the ground is saturated) should be returned, but the Maliki hold that an upstream owner should not artificially hold back any water after he has irrigated his land, but should allow the remainder to flow back to lower-lying lands without waiting for the water to completely saturate his fields. If as a result the lower-lying plots are inundated, he is not required to pay damages, provided that it was not done out of spite or carelessness (Ali ibn Muhammad 1903–8, 315).

Irrigation canals are the joint property of the individuals who built them, and they alone are entitled to exercise the right of irrigation (Ali ibn Muhammad 1903–8, 316: Al-Wanscharisi 1908–9, 285). For other construction works (mills, bridges, and so on), the consent of all co-owners is required (Ali ibn Muhammad 1903–8, 316: Al-Wanscharisi 1909, 285). The manner of use should be established by mutual agreement among all involved (Ibn 'Abidin 1869, 439).

The digger of a well, whether on his own land or on unoccupied land, becomes the owner of the wellwater as soon as he has finished digging it (Ali ibn Muhammad 1903–8, 321). Possession through use is also a subject of discussion (Muhammad ibn Ali 1923, 169). The owner of the well is the sole holder of the right of irrigation and is not required to supply water to irrigate other land (Ahmad ibn Husain 1859, 90–91; Khalil ibn Ishak 1878, secs. 18, 19; Ali ibn Muhammad 1903–8, 319–20).

The Maliki stress that a gift of surplus water to an owner whose well has caved in through no fault of his own is obligatory and is made without payment; however, if the cave-in is due to his carelessness, he may have such water only if he pays for it (Khalil ibn Ishak 1878, secs. 18, 19; Malik ben Anas 1911, 190–91). The Shafi’i consider that it is always obligatory to give one’s surplus water for the irrigation of the fields of others. The Hanifi say that there is never any obligation incumbent upon the water owner.

Anyone who digs out or improves a spring in unoccupied land has the exclusive right to irrigation (Ali ibn Muhammad 1903–8, 321) and rain-water belongs to the owner of the land on which it falls (Khalil ibn Ishak 1878, secs. 16.1, 20.1). On no account, however, can surplus springwater and rainwater be refused for the irrigation of land where crops are in danger of dying.

The general Shi’ite principle of irrigation rights is that these belong solely to the title holder of the source of water in question, free of any servitude. Where there are several owners, the distribution of water among them depends on whether the source consists of springs, wells, or rain; an artificial canal; or a natural watercourse.
When the water supply from springs, wells, and rainwater is sufficient to supply everyone's requirements or when the proprietors agree on the manner of possession, no difficulties exist. In contrary cases, however, the water is divided proportionately to the size of the respective plots, with due consideration to the location of the land (Querry 72, art. 74). The waters of an artificial canal, on the other hand, become the property of the diggers, and the right of irrigation is exercised in proportion to the funds invested (ibid., art. 75). In the case of natural watercourses, upstream landowners are entitled to first use of the water – for crops, the plants should be covered with water; for trees, the foot of the tree should be under water; and for date palms, the water should come to trunk height. The upstream proprietor is not obliged to let the water reach the plots downstream until he has finished irrigating his own crops in the described manner, even if the crops of downstream owners suffer as a result (ibid., arts. 76, 77).

Transfer and sale of water ownership

In Sunnite jurisprudence, the Maliki and Shafi‘i follow the principle that the owner of a supply of water may sell and dispose of it at will, except in the case of water in a well dug for the watering of livestock (Khalil ibn Ishak 1878, art. 1220, secs. 16, 17; Malik ben Anas 1911, 122; Ali ibn Muhammad 1903–8, 320). The purpose of the sale must, however, be known and stipulated. The Hanifi and Hanbali, on the other hand, only allow the sale of water in receptacles (Ibn ‘Abidin 1869, 441).

By contrast, the right of irrigation is attached to land and follows it in all transactions involving the land. Though the owner may dispose of the land without the irrigation right, doctrines differ as to the right of disposing of the irrigation right in this case. The Hanifi do not permit the sale of the irrigation right, which can only be transferred by inheritance. However, the owner can attach the irrigation right to another piece of land without such a right that he owns or of which he acquires ownership – and the irrigation right can then be sold with the land, thereby enhancing its value (Ibn ‘Abidin 1869, 441). The Maliki, on the contrary, allow full freedom of action in regard to the disposal of the irrigation right. In particular, they recognize the right to sell it, reserving the use of the water to certain specific days. They also recognize the right to sell shares of irrigation time while retaining possession of the right itself and its sale or rental apart from the land (Malik ben Anas 1911, 10:121–22).

Under Shi‘ite principles, on the other hand, water can be sold only by weight or by measure, i.e., it must be in a container, because of "the impossibility of delivering it owing to the possible immixture of extraneous substances" (Querry 1872, art. 67).

Land tenure and water rights

Islam began with no administrative machinery; it therefore developed on a customary basis. Land ownership as it exists in Islam was mostly determined by Muslim land laws, which developed during the centuries following the Muslim conquest, largely on the basis of the Byzantine concept of supreme ownership by the ruler of the state.
Land taxation practices developed according to the general examples given by the Prophet. The population was divided into two categories: Muslims and non-Muslims or dhimmis. Muslims paid a tax called usher (tenth or tithe), which varied between 5 and 10 per cent of the value of the harvest according to whether the land was irrigated (either artificially or naturally) or not. Dhimmis paid two different forms of taxes: the jizya and the kharaj, which soon became to mean respectively "poll tax" as a tribute for protection and "land tax."

"Muslim community" is the expression that Muslim jurists use to designate the state, and "imam," originally the khalifa and later the sultan, to designate the qualified representative of the community. Imams, as a matter of principle, never had any legal authority or power in classical law to control the distribution of waters irrigating private land (miri property, with the owner having the full right of disposal). Their authority, however, does extend to water attached to miri property, that is, property in the collective ownership of the entire Muslim community.

The ultimate owner of miri property is the state, while the landowner has the status of a quasi-owner. He may sell, let, mortgage, or give away ownership, but cannot bequeath it by will. In practice, the estate can be inherited by sons although this was not allowed in the beginning, but if there are no heirs the property goes back to the state. The state has a right of supervision. The theory that land given for the purpose of cultivation must be cultivated by the recipient or occupant and that he must pay taxes is upheld. The validity of any transfer of such lands must be certified by the state or its agents.

There are many different forms of collective ownership, the most important being: Mawat, mewat, or mushaa; kharaj; and waqf.

_Mawat, mewat, or mushaa_ are uncultivated "dead lands." They are considered as being in the collective ownership of the Muslim community in Arabia, Iraq, Jordan, Lebanon, and Syria. This form of land ownership allows the individual only a share in the possession of the land which is owned collectively by the village or tribe; there is no individual right of ownership. A system of rotation enables each person to receive a different share each year. Although the absolute power of the khalifa to make land grants out of such idle tracts is recognized, either by granting ownership of both the soil and the waters thereon or by allocating titles to water and land separately, other concepts have been developed by the various schools of law. The Hanifi claim that there cannot be private appropriation of land without cultivation, even with the permission of the sovereign, and the Maliki claim that land can be owned privately with such permission provided it is developed (Malik ben Anas 1911, 15:195).

_Kharaj_ or conquered lands are cultivated and productive lands on which the kharaj or land tax is levied, as is done on all conquered lands from which the sovereign has neither expelled nor expropriated the inhabitants, whether or not they have converted to Islam. Being the property of the Muslim community, these lands are administered by the khalifa. The owner, in principle, does not hold full title to the property but only enjoys
the usufruct from it. Muslim administrative authorities were responsible for all questions dealing with waters on these lands.

*Waqf* is land owned by the state, the income from which constitutes state revenues, and is allotted to pious foundations – mosques, cemeteries, fountains, schools, and so on.

**Present-day practice**

Water resources in Islam are public property (state property or public domain). This facilitates the proper management and administration of water. In fact, most Muslim countries that have passed recent water legislation have declared all water to be part of the state or public domain. In this way, it follows that a permit or concession is required for any use of water. In these permits, which are temporary (from one to fifty years), the water administration may insert all the conditions it considers necessary, on the basis of plans or in the public interest.

The same procedure is followed with regard to the payment of water rates, fees, or other financial requirements. If, in theory, it is not possible to tax water in itself because it is a gift from God, it is perfectly legitimate to tax the water service or to tax the supplying of water for different purposes, always with a permit. This is the practice in many Muslim countries.

The transfer of water can also be handled as the water administration wishes. It may reduce, under certain conditions, the right to use water and transfer it to another user. If all the waters are to be taken away from a group of users, always for legitimate purposes, the administration may do so in appropriate circumstances and against compensation.

Islam imposes no restrictions on trading water. Water, being a public property, cannot be transferred, but its use can. Therefore, if a user, large or small, possesses a water use permit or concession, he may trade this water to another user, large or small, if the water administration, which is the trustee for public water, so allows.

In Muslim countries, fragmented water laws and inefficient water institutions have been responsible for the mismanagement of water resources.

This is because comprehensive legislation and proper institutions to enforce the law are lacking. For example, water legislation is needed to control pollution of groundwater, particularly in shallow aquifers, caused by the discharge of untreated wastewater. Similarly, a permit system is needed to control pollution by setting maximum discharge levels and the standards to be maintained. In addition, it is most important to have a comprehensive water rights administration to control all uses of water. The Expert Group Meeting on Water Legislation of the UN Economic and Social Commission for Western Asia (ESCWA), held in Amman on 20 November 1996, concluded that the "integrated management and development of water is contingent upon the establishment of an effective legislative framework for an integrated approach to the regulation, development and management of water and other related water activities" (ESCWA 1996). The
passage of water laws emphasizing the management of water resources is indeed needed in all Muslim countries, and the religious precepts of Islam are not an obstacle to the proper management of water resources in all of its aspects.

Notes

1 99:7–8.
2 21:30.
3 Abu-Dawood 3470.
4 Muslim 3798.
5 Al-Bukhari 2.102, in Hadith Encyclopedia.
7 Al-Bukhari 2.104.

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