

Culture and water management: Water and Culture in Pakistan

“Without understanding and considering the cultural aspects of water problems, no sustainable solution can be found”

Pakistan has a water centered cultural identity, geographically (the basin of Indus) as well as historically. The Indus valley civilizations, among the greatest world's civilizations, are based on the importance of rivers (Indus and its tributaries) and sea (coastal area of Pakistan): Harappa, Vedas, and Gandhara. The decline of these civilizations can be attributed in part to changes in the river system.

More recently, the Mughal civilization gave to the world a sumptuous heritage again based on water; an example is the Shalimar gardens (placed by UNESCO on the list of World Heritage in Danger in 1999).

Culture, including religion, clearly influences how people perceive and manage a natural resource such as water. Islam is an important part of Pakistan culture. Water is of profound importance in Islam which considers water as a blessing of God which has to be used in a reasonable, equitable and sustainable manner by the humans.

There is no contradiction between what Islam says about water management and the emerging international consensus on the issue. Water is a social good owned by the community. The environment has very strong and specific water rights, and individuals, organizations, and states are liable for harm that they have caused to the environment, which allows for "polluter pays" legislation. Waste-water reuse is allowable, and encouraged where necessary, provided that the water is treated to the extent that makes it safe for its intended use.

According to a recent World Bank report (Jan. 2006), Pakistan is fast moving from being a “water stressed country to a water scarce country”, mainly due to its high population growth, and water is becoming the key development issue. The groundwater is over-exploited and polluted in many areas; most of the water infrastructure (even some of the major barrages) is in poor repair; the entire system of water management is not financially sustainable. However, large parts of Pakistan have good soils, sunshine and excellent farmers; it can get much more value from the existing flows.

A well established history, tradition and system of water management and entitlements exist, from the Indus Valley Civilization to the 1960 Indus Water Treaty and the 1991 Water Accord which establishes clear entitlements for each province and for each canal command to surface waters (Bashir *et al.*, 1999).

Water conservation in Pakistan can be planned on the basis of Islam. Religious elements could be integrated into a comprehensive program of public education and awareness projects to encourage conservation and reuse, with particular emphasis on women and girls. Methods to improve the efficiency and equity of water use in rural areas, including traditional and religious based practices and technology, could be explored.

Pakistan: a water centered cultural identity

Geographically: the basin of Indus

Pakistan corresponds to a geographically coherent area: the vast basin of Indus, bordered by the mountains and plates which give it its rivers. One finds there the natural framework of a very specific human culture. Helped by the annual flooding of the Indus and its tributaries, communities grew many different crops in the rich soil. In the same way, the other essential aspect of a culture, *i.e.* the communication, is there, ensured by the waterways and also by the network of intricate pathways which skirt and interconnect them.

Historically: the Indus valley

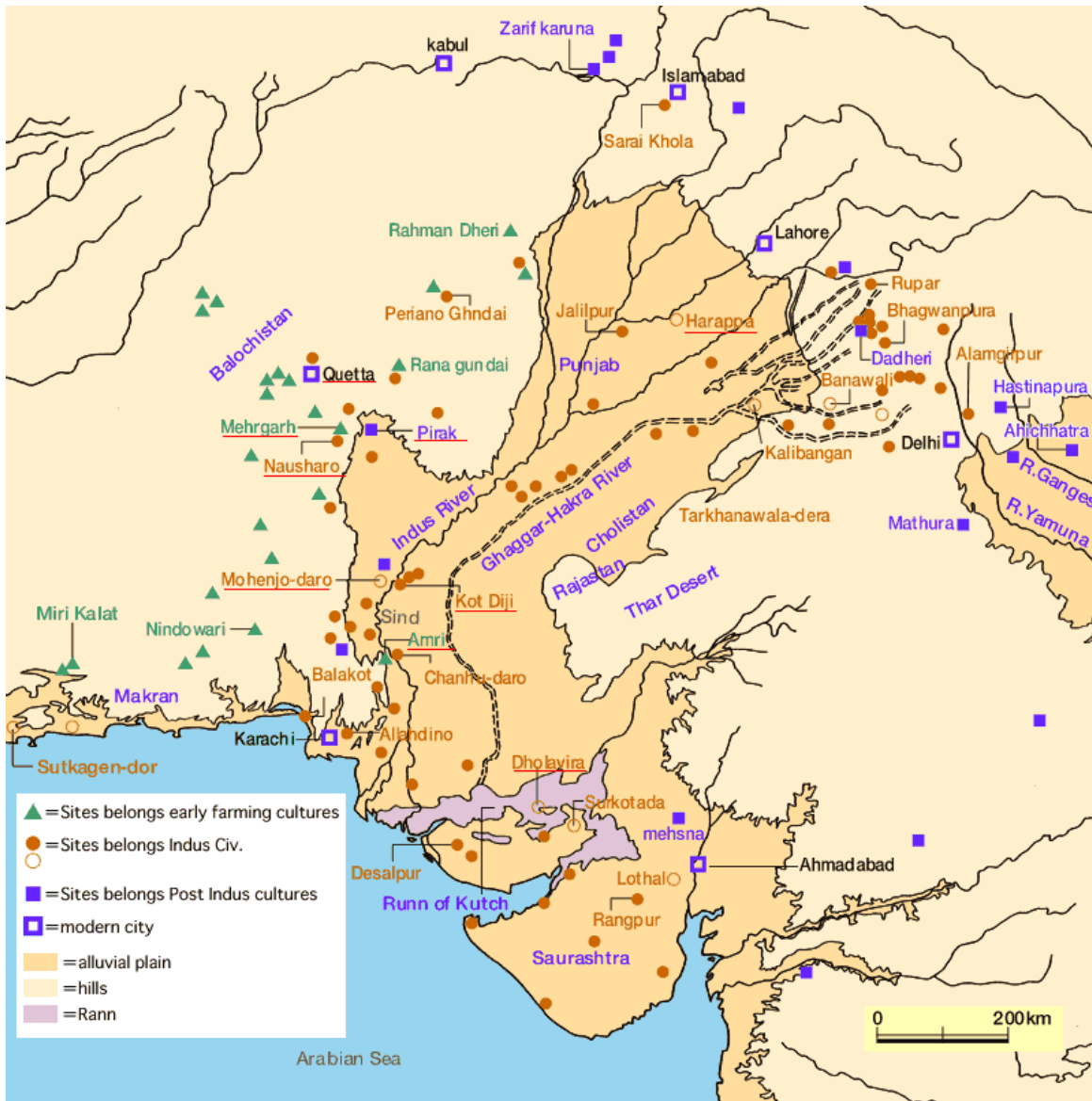
The Indus Valley gave rise to some of the world's greatest civilizations: Harappa (2600 to 1900 BC) and Gandhara, (1st-5th Centuries AD); their social, agricultural and economical systems were based on their interactions with rivers (Indus and its tributaries, Kabul river, *etc.*) which provided irrigation and created fertile land for farming.

Harappa, the Indus Valley Civilization

Contemporary with Sumer and ancient Egypt, the Indus Valley Civilization was one of the world's first urban civilizations that appeared approximately in the middle of the 3rd millennium BC. It flourished in the vast river plains and adjacent regions in what are now Pakistan and western India.

The earliest cities became integrated into an extensive urban culture around 4,600 years ago and continued to dominate the region for at least 700 years, from 2600 to 1900 B.C. It was only in the 1920's that the buried cities and villages of the Indus valley were recognized by archaeologists as representing an undiscovered civilization.

This urban civilization spread over a vast geographical region, from the high mountains of Baluchistan and Afghanistan to the coastal regions of Makran, Sindh and Gujarat. Nanga Parbat and numerous other glacier draped mountains of the Himalaya, Karakorum and Hindu Kush provide a continuous source of water for the Indus and its tributaries. These mountain ranges also provided important timber, animal products, and minerals, gold, silver, tin and semiprecious stones that were traded throughout the Indus Valley.



Map of the Indus Civilization

The large cities were located along the Indus River and its tributaries: Mohenjo-daro on the Indus (Sindh), Harappa on the Ravi River (Punjab) and the now dried up Hakra-Nara River (Cholistan)

The coast of Sindh and Makran have many sheltered bays and ancient Harappan sites have been located along the coast to the border of modern Iran. These coastal settlements were involved in fishing and trading, using the monsoon winds to travel back and forth to Oman and the Persian Gulf region.

The Indus civilization's economy appears to have depended significantly on trade, which was facilitated by major advances in transport technology. These advances included bullock-driven carts that are identical to those seen throughout South Asia today, as well as boats. Most of these boats were probably small, flat-bottomed craft, perhaps driven by

sail, similar to those one can see on the Indus River today; however, there is secondary evidence of sea-going craft. Archaeologists have discovered a massive, dredged canal and docking facility at the coastal city of Lothal.



Traditional bullock cart and flat bottomed ferry boat still in use for local transport along the Indus River (Mohenjo-daro, Sindh)

In 2600 BC, the Indus Valley was verdant, forested, and teeming with wildlife. It was wetter, too; floods were a problem and appear, on more than one occasion, to have overwhelmed certain settlements. As a result, Indus civilization people supplemented their diet with hunting. By 1800 BCE, the climate is known to have changed. It became significantly cooler and drier. People started to leave the cities. Those who remained were poorly nourished. By around 1800 BCE, most of the cities were abandoned.

The crucial factor may have been the disappearance of substantial portions of the Ghaggar-Hakra river system. A tectonic event may have diverted the system's sources toward the Ganges Plain, though there is some uncertainty about the date of this event. The region in which the river's waters formerly arose is known to be geologically active, and there is evidence of major tectonic events at the time the Indus Civilization collapsed. Although this particular factor is speculative, and not generally accepted, the decline of the IVC, as with any other civilization, will have been due to a combination of a variety of reasons.

As the climate changed and the river dried up people migrated to the central Indus valley, the Ganga-Yamuna Valley or the fertile plains of Gujarat in western India. The Indus River itself began to change its course, resulting in destructive floods. Certain distinguishing hallmarks of the Indus civilization disappeared. However, the Indus Valley Civilization did not disappear suddenly, and many elements of the Indus Civilization can be found in later cultures.

The Indus Valley Civilization was followed by the Vedic Civilization which extended over much of northern India and Pakistan. Successive empires and kingdoms ruled then the region. The Indo-Greek Kingdom of Demetrius of Bactria included Gandhāra and Punjab from 184 BC, establishing the Greco-Buddhist period with advances in trade and culture and the city of Taxila (Takshashila) became a major centre of learning.

Gandhāra

Gandhāra was an ancient kingdom in eastern Afghanistan and north-west province of Pakistan, settled since the Vedic times on the banks of Kabul River up to its mouth into Indus. The region is known as Peshawar Valley. Later the Gandhāra crossed the Indus and included parts of north-west Punjab of Pakistan and of the valley of Kashmir. Gandhara was a centre of international commercial activities, and an important channel of communication with ancient Iran and Central Asia.

Kingdom of Gandhāra lasted from 6th Century BC to 11th Century AD. It attained its height from 1st century to 5th Century AD under Buddhist Kushan Kings. After it was conquered by Mahmood of Ghazni in 1021 AD, the name Gandhāra disappeared. During Muslim period the area was administered from Lahore or from Kabul. During Mughals time area was part of Kabul province.

The primary cities of Gandhāra were Purushpura (now Peshawar), Takshashila (Prakrit Taxila) and Pushklavati which remained capital of Gandhāra from 6th Century BC to 2nd century AD, when capital moved to Peshawar.

Pushklavati is situated at the confluence of Swat and Kabul rivers. Three different branches of River Kabul meet there. That specific place is still called Prang and considered sacred. The local people still bring their dead for burial. Aryans found similar geographical characteristics at the confluence of Ganga and Yamuna and founded sacred city by the name of Prayag near Benares, which is one of the ancient pilgrim centers of India.

Mughal civilization

In 712 CE, the Arab general Muhammad bin Qasim conquered Sindh and Multan in southern Punjab, setting the stage for several successive Muslim empires. During this period Sufi missionaries played a pivotal role in converting a majority of the regional population to Islam.

The Mughal period would see a more fruitful blending of Indian, Iranian and Central Asian artistic, intellectual and literary traditions than any other in the sub-continent history. The Mughals had taste for the fine things in life - for beautifully designed artifacts and the enjoyment and appreciation of cultural activities. They introduced many changes to the society and culture, including: A style of architecture and landscape gardening. The Mughal rulers themselves were extraordinary patrons of art, whose intellectual caliber and cultural outlook was expressed in the most refined taste.

One of the marvels of the Mughal garden architecture is Shalimar Garden, which represents the Islamic concept of Paradise. Built in 1642, it follows the Mughal concept

of the perfected walled garden with geometrically arranged ponds, fountains and marble pavilions surrounded by flowers and fruit trees. It covers some 80 acres.



Shalimar Gardens

Following the unfortunate demolition of the unique hydraulic system of the gardens in 1999 in an attempt to widen the Grand Trunk road, the Shalimar Gardens, along with Lahore Fort, were placed on the UNESCO list of World Heritage in Danger.

Water and Islam

Water is of profound importance in Islam. It is considered a blessing from God that gives and sustains life, and purifies humankind and the earth. Humans are viewed as trustees (*khulafa*) and witnesses (*shahed*). Their role and responsibility is to ensure that all resources, including water, are used in a reasonable, equitable, and sustainable manner. All human beings rely on water for life and good health but, for Muslims, it enjoys special importance for its use in *wudu* (ablution that is, washing before prayer) and *ghusl* (bathing). The benefit of the daily prayers, one of the Five Pillars of Islam, has itself been compared by the Prophet (pbuh) to the cleansing action of water in the following *hadith*: "The similitude of five prayers is like an overflowing river passing by the gate of one of you in which he washes five times daily."

The Arabic word for water, *ma'*, occurs more than sixty times in the Quran. God's throne is described as resting on water, and Paradise is described as "*Gardens beneath which rivers flow.*" The life-giving quality of water is reflected in the verse, "*And Allah has sent down the water from the sky and therewith gives life to the earth after its death.*" Not only does water give life, but every life is itself made of water: "*We made from water every living thing.*"

The Quran strongly discourages the waste of any resource: "*But waste not by excess: for Allah loves not the wasters.*" Water wastage in particular is strongly discouraged, as is clear from the following *hadith*: The Prophet Muhammad's (pbuh) wife, Ayesah, said that "the Prophet used to use a very small quantity (equal to 2/3 liter) for ablution and a bit more (equal to 2–3 1/2 liters) for bathing."

Islamic water management principles

According to the United Nations Development Programme (UNDP 1990), integrated water resources management is based on the perception of water as an integral part of an ecosystem, a natural resource, and a social and economic good. The International Conference on Water and the Environment: Development Issues for the Twenty-First Century, held in Dublin in January 1992, called for new approaches to the assessment, development, and management of freshwater resources (UNEP 1992). Moreover, the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992 confirmed the widespread consensus that the management of water resources needs to be reformed.

Necessary conditions for the success of these approaches include public awareness campaigns, legislative and institutional changes, technology development, and capacity-building programmes.

The Islamic perspective toward both man and nature provides a conceptual framework for sustainable resource management. According to Islam, nature is created by God (Allah) for the benefit of humans. The relationship between humans and nature is based on harmony, because all creatures obey the laws (*sunan*) of God. Humans are urged to explore and use natural resources in a sustainable manner.

Islam imposes no restrictions on trading water. Water resources in Islam are public property (state property or public domain) and 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 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.

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.

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.

Waste-water reuse is allowable, and encouraged where necessary, provided that the water is treated to the extent that makes it safe for its intended use.

From the comparison of international water law and Islamic water principles, it can be concluded that a number of common bases exist and a mutual approach can be established. Reasonable shares, equity, public interest, consulting, and preserving the public interest and the ecosystem are the main elements that overlap. However, there is a lack of literature on Islamic perspectives related to share waters, and further work is needed to develop an Islamic water management policy that covers shared waters.

Conclusions

The teachings of Islam that advocate wise use of water resources to meet humans' need to sustain themselves can be summarized in the notion of demand management. People, according to Islam, may control nature and consume its resources, but may not cruelly conquer it in such a way as to irreversibly degrade God's creation.

Policy-makers can tap into Muslims' religiosity and desire for salvation to design and implement an islamically inspired water management strategy as, for Muslims, salvation can be achieved only through applying Islam's teachings and *sharia*, which are clearly water-friendly.

There is no contradiction between what Islam says about water management and the emerging international consensus on the issue. Both agree that freshwater resources are limited, vulnerable, and important for life.

Islam urges all members of society to take an active and positive attitude toward public concerns. This involvement should be performed through effective communication and consultation; so, decision-making can be based on group consultation and consensus (*shura*). Each has a social responsibility to conserve water and prevent water pollution and, in Islam the responsibility for taking care of resources is not divided by gender.

In an Islamic society, both men and women play a crucial role in making the world a livable place. They act as God's deputies on earth. They both enjoin what is right and forbid what is wrong. A functional division of labor is practiced in the Muslim family. The man takes primary responsibility for earning and providing the necessities of life; while the woman takes primary responsibility for managing the household and educating and bringing up the children. As a result, Muslim women can play an important role in conserving water at home and in society. They can convey knowledge, attitudes, and practices that promote conservation, pollution prevention, and sustainable consumption. In the local community or at higher policy levels women can be part of advisory commissions for water planning and management. Instilling values of environmentally sound practices is of crucial significance to the future. Thus, because of their primary role in Islam to educate their children, women have a key position in teaching future generations' sustainable consumption patterns to ensure effective use of resources.

The role of women in Islam as providers and users of water and guardians of the living environment is well documented. Bringing water from springs and wells was typically carried out by women, and historically, the story of the rituals of pilgrimage in Mecca has

been formulated around Hajar, the wife of the Prophet Ibrahim. Her search for water between Safa and Marwa had made these places into sites of remembrance for Muslims.

Recommendations

Within the frame of the 1991 Water Accord, each province knows clearly its rights and duties according to water resource management and water sharing and distributing among the farmers. The focus could now to be done on administering this system in a more participatory manner, based on the principles of Islam. Such plans will be effective because they rely on a natural approach to handling water scarcity and they will produce much better results than if plans are based only on government regulations.

Government rules and regulations alone are often ineffective in changing people's water management behavior, as mosques and religious schools, using religious points of view regarding the wastage of water, can play a useful role in controlling water wastage: the reduction of water shortage complaints found in these case studies suggests that savings of water can be significant.

A consultative council for sustainable water management and law reform can be recommended. This council should be represented by scholars in both science and religion to ensure interdisciplinary learning and help to promote innovation. One major task of this council would be to formulate both national and international Islamic water policy. Evaluations of the performance of this council, as well as new rulings (*fatwa*) as they appear, should be accessible to the public.

As water has economic value, more research should be carried out to clarify the economics of water, water rights, and the value of water. Equity issues in reallocation of water must be addressed from an Islamic perspective.

Introduction of courses on water management and conservation, based on an Islamic viewpoint, and specifically the Quran and hadith, can be done in the syllabuses of universities and religious institutions, involving religious leaders and students.

Short courses and workshops can be conducted to educate government officials on the Islamic viewpoint regarding water conservation, using the research work done in the religious studies departments of universities and in religious institutions.

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