Chapter 4
Ways of Water Management in Islam: Potential Insights for Future Water Governance

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Abstract Water is recognized as a universal right and a crucial component of the people's life and a country's security and sustainability. The Holy Qur'an and Hadith instill in their followers' values of social justice and equity, which extends to the practice of conserving the earth's natural resources, most notably water management. According to Islam, water is a communal resource and a human right. This article discusses water availability and use, ethics, and overall management from an Islamic perspective. This chapter examines water's legal, political, and social implications in Islamic law (sharia) for water management. The issues discussed include the law and political complexities associated with water, the basics of sharia and water, the significance of practice in that relationship, the development and practice of water codes and their relationship to sharia, the reforms in the modern era, the dominance of Western law and its significances, the continual consequence

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of sharia to water, and the ecological conservation. This article also explains the ethics of water management in terms of stewardship, conservation, water pricing, and privatization in the light of sharia (Islamic law based on the Holy Qur'an and Hadith). It puts the potential insights forward to solve the current challenges of water management for which a considerable number of people suffer worldwide and enhance future water governance.

Keywords Water management · Religious views · Islamic sharia · Environmental conservation · Water ethics

4.1 Introduction

Water is seen as a human right and a vital component of a country's survival and security. Ensuring water security is a complex challenge with interconnected effects and repercussions on human rights, economic growth, ecosystems, food, and energy security. By 2025, about 67% of the global population might be living in water-stressed countries. Due to the intricacy of the global water problem, the idea of water security was developed. The word encompasses hazards, human and environmental demands, disputes, competitiveness, and physical availability. This complicated interrelationship creates a societal issue, which needs several parties' collaboration to address (Daoud et al., 2022).

Humans may use and exploit natural resources following Islamic beliefs, but they should not alter nature in a way that irreparably destroys the environment (Absar, 2013). According to the Islamic faith, Allah owns the biosphere and entrusts humanity with passing it on relatively undamaged to future generations. This adheres to the principles of sustainable development and intergenerational justice. People should share in the abundance and scarcity of all resources, given that those are limited, and the people are fully accountable to Allah (God) for their activities on earth as inheritors. Muslims maintain unique cleanliness routines that distinguish them from other civilizations. Following Islamic custom, all Muslims rinse with water after urinating or defecating, and toilet paper is used only for drying (Burke, 2009). This demonstrates the significance of water and the necessity of having access to clean water in restrooms. There are particular sanitary fittings connected to the plumbing that feeds water to the toilet (Absar & Syeda Mariya Absar, 2013). The need to wash before each of the five daily prayers and after using the toilet increases all Muslims' per capita water demand and consumption (Al-Alawi, 2019). According to data on water resources from the Pacific Institute, around 75% of Muslims can easily access fresh drinking water, and 60% of the population has access to sanitation (Gleick et al., 2009).

People face a variety of environmental, economic, and political difficulties in accessing water worldwide, and it is bound together by religious and ethical principles that may serve as the foundation for water management policy (Ghafran & Yasmin, 2020). Globally, there is a greater awareness of people's traditions and expertise influencing resource management and policy, but the potential significance

of religion as a basis for policymaking is undervalued. A water management program based on Islamic precepts has a higher chance of being an effective solution for humanity.

In Islam, two key sharia ideas apply to water rights: "shafa," or the right of thirst, which provides the most basic need of humans and animals to satisfy their thirst (Loodin & Wolf, 2022), and "shirb," or the right to irrigate fields (Shroder, 2016). According to these two main ideas, priorities are given to human and household usage, followed by animals, agriculture, industry, and recreational activities (*shafa* and *shirb*) (Saatsaz, 2020). Due to geographic, social, ethical, and cultural variations, many Islamic nations interpret these two core sharia concepts (*shafa* and *shirb*) differently. After a community's drinking and domestic needs are addressed, *shirb*—the right of irrigation—takes precedence (Loodin & Wolf, 2022).

Upstream users have priority over downstream users in Islamic water management since the river flow reaches upstream users first (Odeh Rashed Al-Jayyousi, 2021). If new communities are built upstream after the downstream societies have been founded, downstream consumers are given priority with water usage, followed by the newly established upstream communities (Scotto, 2021). Furthermore, even if the requirements of the communities are supplied and met, storing extra water is strictly banned in Islam. However, surplus water is divided among users in Islamic communities based on mutual agreement or customary norms and regulations (Abdelzaher et al., 2019). Despite the distinctions between the Shiite and Sunni schools of law, the utilization of *shafa* and *shirb* principles in Islamic countries is comparable. Regardless of how *shafa* and *shirb* are implemented in Muslim-majority countries, Islam instructs its adherents to coexist peacefully and in harmony with one another and the environment. According to Islamic water management philosophies, *Allah* (God) entrusted the natural environment to humanity (Abderrahman, 2000a). As a result, humanity is responsible for maintaining the environment.

Many studies have been focused on water management (Bereskie et al., 2017; Lefers et al., 2015), Islamic water management (Abderrahman, 2000a; Amery, 2001; Loodin & Wolf, 2022), water conservation (Majeri Mangunjaya & Elizabeth McKay, 2012; McKay et al., 2014; Lefers et al., 2015), ethics (Abedi-sarvestani & Shahvali, 2008), and environmental sustainability (Joseph, 2015; Islam & Repella, 2015; Saatsaz, 2020). Some studies focus on ethical issues in water management in various religions and ethical issues in business. But how Islam promotes ethical water management and future water governance is still missing. Therefore, this chapter attempts to explore the potential of Islamic knowledge for ensuring ethical water management and future water governance.

4.2 Methodology

A qualitative approach has been applied in this study due to its nature. Data and information have been collected from the major databases like Web of Science, Scopus, Springer Link, ScienceDirect, and Google Scholar. An analytical method has been used to extract relevant information from collected documents. The useful information has been extracted in the light of Islamic sharia (the Holy Qur'an and Hadith). The arguments of Islamic scholars have been used to interpret the obtained findings. A theoretical framework has been developed through the Holy Qur'an and Hadith knowledge. Besides, *Tawhid* and *Fitra* have been considered as the basis of explaining water management in Islam.

The main objective of this study, ways of water management in Islam, has been assessed through explaining stewardship, conservation, water pricing, and privatization. Besides, water governance has been described based on the legal, political, and social aspects in the light of Islamic sharia.

4.3 Theoretical Framework

According to Islamic beliefs, water belongs to God, who has committed it to humanity for use and transfer without causing it serious harm. The Islamic doctrine of water management is founded on two fundamental concepts: *Tawhid* and *Fitra* (Saatsaz, 2020). While Tawhid requires humans to use natural resources (such as water) responsibly and sustainably, Fitra encourages basin- and inter-basin-level cooperation. The Holy Qur'an and authentic Hadith are also sources of the instruction of the Almighty God (Majeri Mangunjaya & Elizabeth McKay, 2012). Therefore, these two sources have been undertaken as a source of interpretation of water management and governance in Islam (Loodin & Wolf, 2022).

4.3.1 Tawhid

Tawhid is the first pillar among the five pillars of Islam. According to Tawhid, it means Muslims should submit themselves and their activities to God, the single creator of the cosmos (Amery, 2001). Ibn Taymiyyah, a notable Islamic jurist in the thirteenth century, enhanced the work of early Tawhid scholars by adding his own interpretation that broadened the area of Tawhid from a purely theological term to encompass socio-ethical whole-life problems (Al Karaimeh, 2019). *Wahdat al-wujud* (the oneness of all creatures) is often referred to it as the one truth, the one essence, or the one reality. Humans are obligated to regard each other as equals in light of this oneness and the sovereignty of the one Lord to whom Muslims bow. Equal opportunity and cooperation are also implied. Because they are incapable of

generating these resources, which belong to the "Creator of Everything," people should partake in both the abundance and scarcity of all resources (Jamalinezhad et al., 2012). People are accountable to God for their acts on the world since they are inheritors, trustees of the earth, and not sovereign of Him. There is a basic oneness between humans and nature (Kaminski, 2019).

4.3.2 Fitra

Fitra refers to humanity's intrinsic essence or standard and the harmony that exists between people, creation, and God (Qadir & Zaman, 2019). This idea is a measure of truth in our acts and beings and the level of harmony we have with the cosmos at some point. Fitra, like Tawhid, is a unified concept that connects humans to their surroundings (Hasan, 2020). An interdisciplinary effort can best understand and manage the oneness of all species and the relationship between them and their Creator. Islam, in this perspective, makes people "responsible for maintaining and protecting the integrity of their domicile." This is in line with the concept of Tawhid, which states that there is only one ultimate and Almighty God. As a result, it is wicked for people to utilize their technical and scientific skills to undermine the Creator's power by irreparably damaging the hydrological and terrestrial ecosystems (Loodin & Wolf, 2022).

4.3.2.1 From the Holy Qur'an

In Islamic culture, water is extremely important. In reality, Islam has taught its adherents to use natural resources with equality, justice, and sustainability in mind. According to certain scholars, water is referenced more than 63 times in the Holy Qur'an (Amery, 2001). Water is considered sacred in Islam due to its life-saving nature. The Arabic word "ma'aa," which means "water," appears 60 times in the Qur'an. Furthermore, rivers, oceans, fountains, springs, rain, hail, clouds, and winds, among other things, are frequently mentioned as signs and indications of Allah's Compassion and Kindness (Catovic, 2012). The Qur'an also mentions the phrases *Nahr* (river) and *Shariba* (drinking water) 54 and 39 times. Similarly, Amery claims that several types of precipitation (rain, dew, and snow) have been mentioned over 100 times in the Bible, including the passage "And we made from water every living creature" (Qur'an, 21:30).

Water as a Basic Element

> And it is He who created the heavens and the earth in six days, and his Throne was upon water, that He might try you... *Surah Hud (Hood) 11:7*

> . . .We made from water every living thing. Will they not then believe? *Surah Al-Anbiyah (The Prophets) 21:30*

Ensuring Quality of Life

> And Allah has sent down the water from the sky and therewith gives life to the earth after its death. . . *Surah an-Nahl (The Bees) 16:65*
>
> Say: if your stream be some morning lost, who then can supply you with clear flowing water? Surah Al-*Mulk (The Dominion) 67:30*

Water as Purifier

Wudu (ablutions) are a religious requirement that must be carried out correctly before *Salat* (ritual prayers) in order to achieve cleanliness. The technique for conducting *wudu* is described in depth in the Qur'an.

> . . .It is He who sends down water upon you from the sky with which to purify you... *Surah Al-Anfal (The Spoils of War) 8:11*
>
> O you who believe! When you prepare for prayer wash your faces and your hands up to the elbows, and wipe your heads and wash your feet up to the ankles. . . *Surah Maidah (The Table Spread) 5:6*

4.3.2.2 From the Hadith

Muslims believe that the cornerstone of Islam is maintaining social justice or equality in society. Almost all Hadith, including those on water, are concerned with maintaining equality (Dieye, 2020). "None of you will have faith unless he wishes his (Muslim) brother what he desires for himself," for example. This applies to the demand for a sufficient supply of clean, fresh water and everything else. A Muslim cannot keep surplus water for himself; rather, he must share it with others. "A guy [who] owned surplus water on a path and withheld it from the travelers," the Prophet (Peace Be Upon Him (PBUH)) said, "is one of the three persons Allah would disregard on the day of resurrection."

Water is a common item to all humanity. "Humans are co-owners in three things: water, fire, and pastures (and therefore must share them)" (Muslim).

On Conservation of Water

When the Prophet saw Sa'd performing *wudu*, he said: "What is this? You are wasting water." Sa'd replied: "Can there be waste while performing ablution?" The Prophet replied: "Yes even if you perform it in a flowing river" (Musnad of Imam

Ahmed). One full palm was used for ablution by the Holy Prophet Muhammad [PBUH]. Hadith from Bukhari and Muslim say that Prophet Mohammad [PBUH] would perform ablution with one "mudd" of water, which is equivalent to around 0.544 L of water (Al Mamun et al., 2014). Based on the records of Islamic history, there are some scholars who opined a slightly higher amount, but the right quantity is less than 1 L (Zaied, 2017).

Water Distribution

According to *Sahl bin Sad*, a glass (full of milk or water) was delivered to the Prophet, who drank from it, while a youngster, the youngest of those there, sat on his right side and old men sat on his left side. The Prophet asked, "O boy, will you allow me to give it (i.e. the rest of the drink) to the old men?" The boy said, "O Allah's Apostle! I will not give preference to anyone over me to drink the rest of it from which you have drunk." "So, the Prophet gave it to him" (Bukhari).

4.4 Discussions

4.4.1 Water Management in Islam

Water is an important aspect of Islam, as seen by its inclusion in Islamic beliefs and texts. As Muslims, we must recognize water as one of the many blessings Allah (swt) has bestowed upon us. Muslims are obligated to conduct *wudu* and *ghusl* (ablution rites) using water before prayer throughout the day, utilizing the blessing of water as a source of development, nutrition, and cleansing (Kamali, 2016). We know that water will assist us in the hereafter since tales of heaven describe decorated gardens with flowing rivers, underlining its relevance to humans.

4.4.1.1 Stewardship

Water management must incorporate elements of local cultures and religions due to the cultural aspect of the environment and the changing geographical and temporal settings of water resources (Amery, 2001). Water and other hydrology-related terms appear frequently in the Holy Qur'an. The word "water" (ma') appears 63 times in the Al Mu'jam Al Mufahras (index) of the Holy Qur'an, while "rivers" appears 52 times. Other words that appear less frequently include "fountains," "springs," "rain," "hail," "clouds," and "wind." The eternal destination of believers and those who do good deeds (4:57) is frequently shown in the Holy Qur'an as having running rivers, among other desirable services and objects. A management tool that incorporates non-traditional cultural and spiritual approaches in addition to traditional

(economic) water management tactics is potential to succeed in the Muslim nations (Chuvieco, 2012).

A khaleefah, or earth vicegerent or steward, is expected of a faithful Muslim. In the natural environment, humans are equal participants, but we also have extra obligations (Chuvieco, 2012). We are not the lords and masters of it. Muslims, he claims, are protectors and friends of the environment. A khaleefah should establish the boundaries and penalties of human behavior prescribed by Almighty God and prohibit indecency and despoilment. Individual rights cannot be abused in Islam because the concept of acting in "good faith" underpins Islamic law (Abdelzaher et al., 2019). All of humanity inherited in the world. Each generation only serves as a trustee. Actually, no one has a right to pollute the environment or use natural resources to leave only a polluted or severely resource-depleted planet for future generations (Abdelzaher et al., 2019). In other contexts, the term khulafa, a derivation of khaleefah, alludes to the concept that successive waves of mankind will inherit on earth (Maliva & Missimer, 2012).

People are taught to be religious, conscious of God's presence, and considerate of future generations' needs. According to Prophet Mohammad (PBUH), excellence (ihsan) is "to worship God as though you saw Him, God sees you even if you don't see Him." Muslims, according to Hamed (1993), recognize God's ongoing presence and intervention. This "directly modifies a Muslim's relationship with his surroundings" and "prevents him from transgressing," according to this perspective on excellence. In addition, one important Hadith urges a Muslim to "act in your life as if you were living forever, and perform for the Hereafter as if you were dying tomorrow." A Muslim is effectively expected to have a longer-term perspective on life, which will alter how they interact with nature (Abedi-sarvestani & Shahvali, 2008). If you could live "forever," you'd probably conserve natural resources and safeguard the environment.

Furthermore, even if previous generations "cheated" them, they should not cheat future generations. "Deliver what you have been entrusted with to the trustee, and do not betray whomever has deceived you," the Prophet stated. As a result, people who practice fassad are practically sinners. Their ecologically destructive behavior violates "God's covenant" (2:27), which required the "seed of Abraham" to diligently serve Him in exchange for "God's benefits." At another level, every creation of God figuratively enters into a similar covenant: we owe God the deepest appreciation and ready obedience for His loving care. As a result, a person who willfully "forsakes the way" and refuses God's "Grace" would suffer losses on his own.

4.4.1.2 Conservation

Two unequivocal references in the Holy Qur'an about water support water demand management (McKay et al., 2014). First, water is limited in supply; therefore, it should not be squandered. "And we pour down water from the sky in definite proportion," says the phrase, implying that because water resources cannot be infinitely replenished, demand must be handled at some point (Majeri Mangunjaya

& Elizabeth McKay, 2012). Therefore, the Holy Qur'an instructs humanity to use God's resources for sustenance in moderation, as long as they do not abuse them: "O Children of Adam!...Eat and drink: But waste not by excess, for God loveth not the wasters" (7:31). It is even more clear in the Hadith. The Prophet Mohammad (PBUH) used one mudd of water for ablution and one sa' to five mudds of water for bathing (a "mudd" is approximately 0.7 L and "saa" is a measurement of approximately 2.5 L). This Hadith reveals the Prophet's rational approach to sustainable water management in desert Arabia. "Do not squander water even if doing ablution on the brink of a fast-flowing (big) river," the Prophet warned, even under seemingly abundant circumstances.

Prophet (PBUH) stated in a Hadith that when a person dies, his "legacy is severed save from three things: an excellent flowing achievement (*sadaqa jareeyah*), knowledge from which others (would benefit), or a good offspring who supplicates (to God) for him/her." A graceful good deed is defined as a source of "flowing water," among other things. Many Islamic towns have public, freshwater water fountains along main streets that typically lead to popular souqs (market areas) or prominent mosques, demonstrating the physical expression of this Hadith. The shielded fountain box is usually adorned with a marble plaque and a cup suspended from a rope. On the marble plaque are frequently etched the Holy Qur'anic verse(s), the name of the deceased in whose honor the public tap was created, and a request that passersby or those drinking the water pray for that departed person.

Many Muslims interpret the Hadith above to suggest that if they want to continue earning heavenly rewards for their good actions after they die, they must ensure that future generations have access to safe drinking water (Chuvieco, 2012). This aligns with God's message to Muslims, which states that they are only heirs to the Earth and should not irreversibly harm it. "One is not regarded loyal until he wishes/desires what he loves for his fellow human being for himself," according to a Hadith recounted by Bukhari and Muslim. As a result, Muslims must share the surplus of God's blessing with others to survive and ensure that future generations will be able to fulfill their basic necessities (Amery, 2001). On another level, the Qur'an makes repeated allusions to natural resources being available for human use. "Eat of the excellent foods that We have given for your sustenance," it says, "but commit no excess ("*la tatghou*") therein, lest My anger should fall on you justly" (20:81). It's important repeating that God doesn't grant mankind blanket permission to exploit His resources; they must be used intelligently and sparingly to meet their basic requirements (Bauer et al., 2022).

A Muslim is taught to remedy environmental mistakes by refraining from practices that squander or damage water. At the same time, when there is an excess of water at the home, farm, community, or provincial level, one is obligated to share it with others. According to a Hadith recounted by Bukhari, "Allah will not talk to, nor look at," three categories of individuals on the Day of Resurrection, one of them is "a guy who withholds his extra water." "Today I will withhold My Grace from you as you withheld the surplus of what you had not created," Allah would declare. Furthermore, withholding "extraordinary water" to "prevent people from grazing their animals" was forbidden by Prophet (PBUH). Note that, in Islam, relationships

between a person and social and natural surroundings are often cast in a broad meaning that encompasses all individuals, regardless of whether they are Muslims or not (Emari et al., 2017). This is crucial evidence of the natural environment's oneness and interconnection, especially the hydrological cycle.

A Muslim should inquire about the intended usage of shared waters when it comes to resource sharing. They must inquire the consequences of the allocation of water resources on the communities and ecosystems that supply them. Several religious schools of thought about sharing water must be considered (Yezli et al., 2021). Furthermore, and this is crucial to the Arab-Israel conflict, it may be difficult to understand Muslim jurists' positions on water sharing with non-Muslims, particularly if they are your enemies. Given Islamic law's larger ethical foundations, it's fair to believe that the general principle of sharing enough water to fulfill people's fundamental, life-sustaining requirements will be respected.

Conservation of water is just as vital as sharing it. A man is said to have observed Prophet Mohammad doing the obligatory pre-prayer ablution. He informed him that even though he was "placed on a rushing river," he should not use too much water (Lefers et al., 2015). Even if water is abundant and being utilized for religious purposes, it should be used cautiously.

4.4.1.3 Water Pricing

According to Islamic law and custom, humans were given precedence, followed by animal watering and last agricultural needs (Abderrahman, 2000a). Despite its initial origins as a common good, most current Islamic scholars have determined that people have the right to use, sell, and collect value-added costs of developed water infrastructure for water supply distribution. To avoid water shortages and individual control over water resources, the Prophet gave everyone the right to water. On his advice, Uthman purchased Ronna's well and converted it to *Waqf* (a collective property for public use) for the Muslim community's benefit. Az-Zubair and an Ansari man fought over a waterway in the Harra that was used to irrigate date palms.

The benefit of separating Almighty God's basic ownership of wealth from humanity's "managerial" ownership has two conditions: first, people has no right to harm themself, his properties, others, or the environment, and, second, no one can abuse wealth sources or put one's interests ahead of the public interest in their affairs (Maliva & Missimer, 2012). To improve social fairness and combat corruption, Islam supports moral self-regulation, followed by a legal system to enforce its moral code (Abderrahman, 2000b). Combating unequal distribution of wealth-generating resources is a core value in Islam, "in order that it may not (merely) make a circuit amongst the rich among you." In regulating water resources, Islamic jurisprudence strives to balance the reward of labor and the public good. "Muslims have common share in three (things): grass, water, and fire," the Prophet is reputed to have declared. Selling water was forbidden by the Prophet (PBUH) (Kavezeri-Karuaihe et al., 2003).

Tariffs are one of the demand management techniques for reducing water use (Islam et al., 2020). Water tariff designs can help households utilize water more efficiently while also ensuring income security for service providers (Naff & Dellapenna, 2002). Residential water conservation might be rewarded through pricing improvements. Water shortage is causing state and municipal governments and water agencies in several nations to take conservation measures (Al-Alawi, 2019). Alternative and conventional views and value systems can be reflected in a successful Islamically based water policy. It is suggested that in Islamic nations, a widely sustainable water resource management system is more likely to be realized if management tools include a variety of extra inputs from the religious, spiritual, and resource-based realms (Shroder, 2016). After all, stronger levels of Muslim adherence to their religion's principles have been seen. Demand management solutions that are culturally responsive involve a concerted effort to educate people about the good relationship between Islam and water conservation.

4.4.1.4 Privatization

Privatization is permitted with public and private sector participation so long as customers are treated equally and given a reasonable price for water. Specifically, most Muslim scholars classify water resources into three categories for commercial purposes: private commodities, restricted public goods, and public goods (Nabiafjadi et al., 2021).

A private good is water held in private containers, private distribution networks, and reservoirs. This includes water recovered from wells and rivers with specialized equipment or from water distribution corporations (Hefny, 2009). This water is privately owned and cannot be utilized without the owner's consent. The owner can use, trade, sell, or give the item. Even though this water is privately owned, a person in need may utilize it with permission from the owner. Similarly, purified water may be exchanged since the institution responsible for its treatment has invested money and time. This policy may apply to water from treatment facilities, privately delivered and stored water, and any water for which labor, infrastructure, and expertise have been spent.

Open water sources such as rivers, lakes, and water streams are considered restricted public utilities on private property. The owner does not own the water in the conventional sense; rather, the owner has exclusive rights and privileges over other users. Other people can use it for drinking and basic requirements, but only with the owner's consent may it be used for agricultural and industrial uses.

Water found in rivers, lakes, glaciers, aquifers, oceans, precipitation, and snow is a public benefit. Everyone has the right to utilize it (correctly) for drinking, agriculture, and industry, so long as it does not negatively impact the environment or public welfare (Helfaya et al., 2018). This water may be delivered for private use through pipelines, canals, and containers. The government should not prohibit its use unless it can demonstrate that it poses a threat to public welfare and the environment, excessive usage, or fair trade. This kind of water cannot be sold or purchased for

private gain. However, if any value is added to the water, such as purification, storage, or transportation, it becomes a private product that may be sold for a profit (Jamalinezhad et al., 2012).

4.4.2 *Integrated Water Resources Management (IWRM) in Islam*

Islam teaches that Almighty God created the universe and mankind. And the source of water is God, the creator, yet Islam accepts reasonable and pragmatic scientific answers (Odeh Rashed Al-Jayyousi, 2021). The first verse of the Holy Qur'an is "Read," and it contains other allusions that exhort humankind to study the cosmos, nature, and God's creation. Islam says that "all is generated from water" and that global water is limited ("*bekadar*") and in equilibrium ("*mawzoon*").

At the level of water usage, Islam holds that water should be distributed for distinct purposes, with drinking water receiving priority (Fig. 4.1). Moreover, Islam acknowledges the right to the environment. The emphasis on equilibrium,

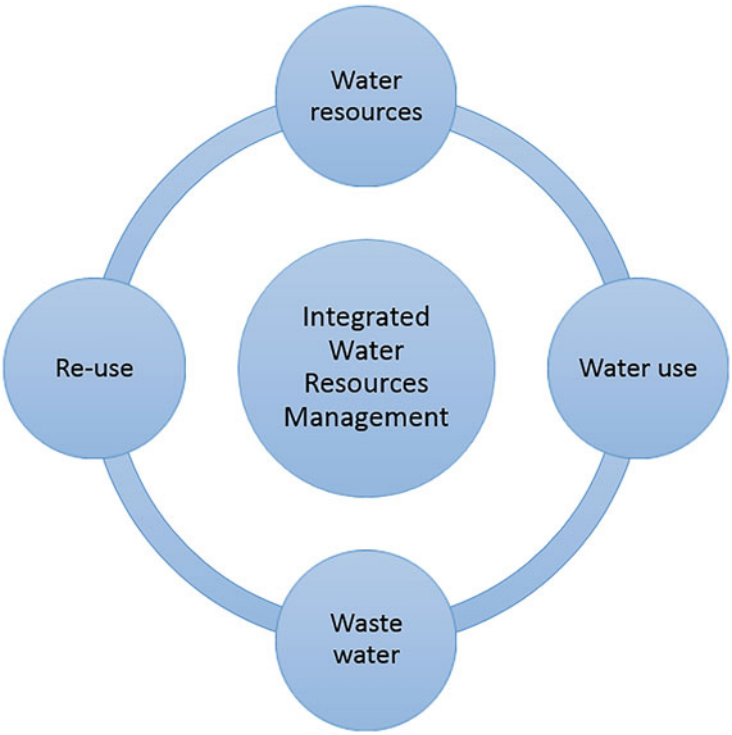

Fig. 4.1 Islamic water resources management framework. Sources: Adapted after (Odeh Rashed Al-Jayyousi, 2021)

conservation, and harmony is central to the Islamic perspective on water usage. Muslims have a unique connection with water, even though all humans require water for survival and well-being (Absar, 2013). Each prayer is followed by *wudu* or ablution, which is the ritual washing of the hands, feet, and face with water. Prayer is one of the five pillars of Islam. Prophet (PBUH) linked the five prayers to the cleaning power of water, stating "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."

Islam disapproves of the inefficient use of water, even when there is no water shortage, because it does not permit waste among even nonliving creatures. It teaches how to minimize all forms of waste and maximize the use of all resources (Odeh Rashed Al-Jayyousi, 2021).

Islam transforms the concept of "waste" and enlightens the human mind to reevaluate the concept of trash by studying nature and natural processes. Human existence is compared with the biosphere and its changes. In the Holy Qur'an, it is mentioned that water is scarce. It should not be wasted.

> ...And we send water from the sky in fixed measure... *Surah Ghafir (The Forgiver) 40:13*

> O Children of Adam!...Eat and drink: But waste not by excess, for God loveth not the wasters. *Surah al-Araaf (The Heights) 7:31*

4.4.3 Water Governance in the Future

Like ozone depletion and climate change, water's future requires a worldwide approach. Future water challenges will require collaborative efforts from all nations, depending on their local science, culture, and understanding; this is called water globalization (Bereskie et al., 2017). Controlling population expansion, conserving water through water pricing, being aware of water footprints, considering measures to supplement water supplies, and using integrated management approaches are all examples of local initiatives.

To be sustainable, local initiatives must balance human water requirements and environmental health (Tortajada & Islam, 2011). Large sums of money spent on water infrastructure in the industrialized world have ensured water supply at the price of the environment, but most developing nations cannot afford such expenditures. Scholars argue poorer nations do not pursue the same route as the industrialized world (Al Karaimeh, 2019; Joy & Lu, 2004). Rather, it recommends that governments ensure a proper water management system that integrates infrastructure with "natural" solutions like protecting watersheds, wetlands, and flood plains. As a response to global water stress, development groups advocate for integrated water and watershed management, in which all users' requirements are considered, and natural elements are combined with human engineering (Helfaya et al., 2018). Instead of draining wetlands and flood plains for agriculture, the developing countries may use them for water purification and aquaculture, which is a greener, less

expensive choice. The watershed should be maintained to ensure that all competing uses have enough water.

The basic principles of water management lie in the Holy Qur'an and Hadith. Most Muslim nations do not employ these principles as the foundation for their water policies (Kamali, 2016). In Islamic history, there was no precedent of creating distinct water policies for water management and distribution. Water was always considered a human right and a gift from Allah, but water shortage was considered a matter of fate and God's prerogative. With the introduction of new water management and storage technologies, largely developed in the west, the paradigm altered, allowing people to participate in water availability rather than relying exclusively on nature (Absar & Syeda Mariya Absar, 2013). As water scarcity collides with other contemporary stresses like population growth and climate change, Islamic values must be integrated into water management techniques.

4.4.3.1 Institutional Intervention

Islam acknowledges the fallibility of humanity and their susceptibility to temptation. Thus, the *hisba*, or public inspection office, was established (Ghafran & Yasmin, 2020). Throughout most of Islam's history, the *hisba* had both a religious and a secular character, but the religious part was lost about the middle of the fourteenth century. The *hisba's* ethical foundations are the Holy Qur'anic injunction to "command what is good and forbid what is evil" (3:104) and the sharia norm of "no hurt" or harm (Gümüsay, 2015). The official in charge of the *hisba* is known as the *muhtasib*, whose duties include monitoring the appropriate conduct of individuals during public activities. This covers the protection of non-human species' rights. A *muhtasib* is intended to prevent animal abuse, safeguard and administer public land reserves, and control water uses, among other responsibilities. According to Ibn Taymiyyah, the essential qualities of a muhtasib are subject-matter mastery, compassion, and patience. If the *hisba* institution is reconstituted, it might be charged with implementing fair and equitable water management procedures (Hamed, 1993).

4.4.3.2 Societal Access

Islam always supports humanity and ensures people's equal access to water resources irrespective of religion. Developing a network to achieve fairness should stimulate cooperation and exchange of water resource management information among Muslim scientists and nations. For the same reason, the cooperation and exchange of water resource management information should be fostered among scientists and countries of all faiths (Williams & Zinkin, 2010). Unsustainable population expansion and its repercussions have become a growing concern that law and legal institutions must consider when water shortage becomes acute and protracted. Communities and governments become unstable when ruling authorities fail to provide essential public services (Joseph, 2015). As a result, water quality,

distribution, and use are frequently negatively impacted locally, nationally, and at regional levels. Technological solutions will not suffice unless proper water laws and institutions accompany them (Hefny, 2009). While the law cannot resolve water conflicts, it is an important component in establishing and sustaining an orderly and peaceful resolution.

4.4.3.3 Meeting Water Demand

Islam ensures the effective use of water so that people worldwide can meet their demands. Water conservation incentives, as well as punishments for misusing it, should be recognized. Wastewater must be treated and reused correctly (Abderrahman, 2000b). Water resource management should be established properly, which should be integrated. Muslim nations must agree on the missions of various international Islamic bodies, give them the authority to adjudicate disputes over water usage rights between Muslim governments, and follow their rulings. All parties should follow fair and reasonable judgments by relevant international institutions in conflicts between Muslim and non-Muslim governments.

4.5 Conclusion

In the Islamic religion, water is not only a necessary component of existence; it is also seen as a divine gift that must be loved and protected. Protecting the water supply has been emphasized several times in the Holy Quran's verses, as it is limited and can be taken away. According to the Holy Qur'anic verses, water is the source of life for all living beings, and it also plays an important part in the growth of food crops and cattle. As a component of the environmental system, Islam places a premium on water. It is a divine blessing that supports life. Water is referenced 63 times in the Holy Qur'an. The Hadith discusses the assurance of justice, equality, and access to water supplies for all. This article examines the availability and usage of water, ethics, and general management from an Islamic standpoint. A cultural approach is very necessary for actualizing water usage and management principles. Soft elements such as human nature and social learning require more attention for transformation in the water sector of countries and regions. As a result, water ethics is a vital tool for these societies' long-term water resource management. It is feasible to organize and coordinate UNESCO's efforts to promote water ethics as a noble goal through networking. There is no conflict between Islamic beliefs about water and internationally acknowledged integrated water resource management (IWRM) principles, which balance social equity, or fairness, economic efficiency, and environmental sustainability across society. Muslims can be encouraged to conserve water by being reminded of their highest example, the Prophet (PBUH). The teaching of Holy Qur'an and Hadith is helpful for all irrespective of religion in managing effective water governance, and sustainability.

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