

The Path to the Water:  
Developing Islamic Legal Theories of Transboundary Aquifer  
Governance

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## Abstract

This research explores possible elements of Islamic law from which Islamic theories of transboundary aquifer governance might be derived. The object of this research is to offer a new perspective on the management of groundwater resources such as transboundary aquifers in the Middle East and North Africa region – and other Muslim-majority countries – that builds upon the congruence between a rich heritage of Islamic law and principles on the management of water and water resources and more recent international law and standards embodying the principle of the human right to water. This perspective is intended to align with the desire of many Muslim-majority States to utilise Shari’a and Islamic tradition as grounding principles upon which all domestic law must be predicated.

In identifying possible elements, the research explores Islamic legal teaching and reasoning on water and the nascent Islamic environmentalism scholarship that is emerging in MENA, including how that scholarship is utilising the key Islamic principles of *Tawhid*, *Amanah* and *Khilâfa* to underpin developing theories of Islamic Environmentalism. This research adds two distinct new elements to this literature; exploring the utility of the Qur’anic principle of the *ummah* as a means of fostering transboundary cooperation between Muslim-majority States negotiating agreements over water resources, and applying the broader scholarship on Islamic Environmentalism to the specifics of transboundary aquifers. An additional new perspective is introduced by examining the development of Islamic Finance institutions and Law as a comparison to illustrate the possibility of organic, practitioner-led processes to institutionalise Shari’a based law and practice in the management and governance of resources both domestically and internationally.

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## Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

# The Path Towards the Water<sup>1</sup>: Developing Islamic Legal Theories of Transboundary Aquifer Governance

## Chapter 1

### Introduction

Both surface and groundwater resources in the Middle East and North Africa (MENA) are to a large extent transboundary. Many of the major surface and aquifer water resources within the MENA region cross political boundaries between Muslim-majority States but limited attention has been paid, to date, to the need for improved internal Arab cooperation on shared water resources, and very little has been paid to how this cooperation and management might be organised in a manner consistent with principles derived from Shari'a, as well as international legal instruments. Further, the majority of analysis on international cooperation and management of water resources in the MENA region to date has been given to the surface water and river courses crossing national boundaries, in particular the rivers Euphrates, Tigris, Jordan and Nile as they connect Arab and non-Arab countries, and Muslim-majority territories with territories that are predominantly non-Muslim.

Far less attention has been given to the management and governance of transboundary aquifer systems in the region. As a result, in many cases, multiple actors are extracting water from the same aquifer or groundwater resource with alarming potential consequences for rapid depletion (Voss et al, 2013). Whilst the United Nations and the Gulf Cooperation Council, amongst other actors, have invested heavily in attempting to develop cooperation mechanisms within the MENA region to better regulate and manage shared groundwater resources, these efforts have met with limited success (Klingbeil and Al-Hamdi, 2010).

An increasing number of MENA countries aspire to develop a theory and practice of Islamic statehood (Feldman, 2012; Hussin, 2016) often evidenced in the explicit requirements

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<sup>1</sup> The term shari'a is derived from the Arabic word 'Shari' which literally means way, path or "the clear, well-trodden path to water".

contained in the constitutions of many of the countries concerned that national legislation be formulated in adherence to Islamic law. Inevitably, this has created tensions with an international legal order that, by necessity, develops treaties, guidelines and working principles at a high level of generality in order to embrace multiple political and social constructs (An-Na'im, 2008). This research proposes to investigate the potential for developing Islamic forms of governance of aquifers that are, nevertheless, compatible with the rules-based legal frameworks developed in the international community.

The over-arching theoretical framework guiding the research will be of the human right to water. In spite of its official recognition by the United Nations in 2010, the human right to water remains a contested notion, with debates over the scope of such a right (Hardberger, 2005; Manaster, 2008) the conceptual appropriateness and effectiveness of the human rights approach in countering water services privatization (Bakker, 2007), and growing challenges from the developing world - and in particular the Islamic world - to the western, liberal, individualistic, and anthropocentric approach of the human right to water (Fantini, 2020). The already rich body of literature on this broader framework will provide the point of departure for the research to explore the specific notion of Islamic governance of trans-boundary water resources.

### ***Objective***

This research intends to explore the possibility of utilising the growing imperative expressed in many countries within the MENA region for State policy to articulate Islamic principles, and adherence with Shari'a, to inform the process of developing cooperative agreements and legal frameworks. This would include frameworks that operate both at a bilateral and regional level, which speak to shared values and aspirations towards Islamic Statehood, but that nevertheless align with the broad principles identified within the United Nations General Assembly resolution on the Law of Transboundary Aquifers.

From a review of the available literature, analysis of potential application of Shari'a as a legal framework for environmental issues is limited (although growing), and no significant research has attempted to examine the issue of transboundary aquifer governance through this lens has been undertaken since the 1990s – and as will be explored later, previous work has focused on water resources more generally, with few mentions of aquifers. A body of literature exists

which examines extant law on water usage and distribution in Islamic countries - for example, Dante Caponera, whilst engaged with the United Nations Food and Agriculture Organization (UNFAO) in the 1960s and 1970s wrote a series of detailed reports on water laws in African and Middle-Eastern countries, and in the 1980s and 1990s scholars such as John Wilkinson and James Westcoat also examined water (and land) usage laws in the Islamic world. However, the work of these scholars does not attempt to analyse groundwater resources specifically, nor does it engage with the issue of potential compliance with both Shari'a and international human rights law, the specific focus of this research.

There has been much focus within the MENA region to the stalled progress towards any kind of regional cooperation agreement on shared groundwater resources, but this has focused on secular legal instruments, without addressing the issue of how those instruments could be aligned with Islamic legal principles. Given the increasing desire of MENA countries to articulate Islamic theories and practices of statehood, it is important to offer examples of how a 'technical' subject such as transboundary aquifer management - which is also intensely politicised, given the competition over water resources in the MENA region - can speak to common values and socio-political aspirations *vis-a-vis* the development of an Islamic identity for statehood and alignment with International Law. In doing so, this research should prove valuable to scholars and practitioners concerned with both water management and political science and governance in the MENA region.

### ***Methodological Framing - The Human Right to Water***

The human right to water will be the over-arching principle guiding the research. On 28 July 2010, through General Assembly Resolution 64/292, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights. The Resolution calls upon States and international organisations to provide financial resources, help capacity-building and technology transfer to help countries, in particular developing countries, to provide safe, clean, accessible and affordable drinking water and sanitation for all.

The GA Resolution followed several years of debate within the UN arising from earlier normative statements and analysis. In November 2002, the Committee on Economic, Social and Cultural Rights adopted General Comment No. 15 on the right to water. Article I.1 states

that "The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights". Comment No. 15 also defined the right to water as the right of everyone to sufficient, safe, acceptable and physically accessible and affordable water for personal and domestic uses.

These commitments to water as a human right were further established as an international norm in the Sustainable Development Goals (2015). Goal Six is devoted to water - "Ensure availability and sustainable management of water and sanitation for all", with a series of targets and indicators related to the access to potable water by citizens, and an explicit target (6.5) regarding international cooperation for the management of transboundary water resources. This framing of water as a human right presents challenges. Several thinkers have raised important concerns with the framing of water as a human right, including questions regarding responsibility for the delivery of the right to water to how it could be enforced (Mehta, 2010). Similar concerns are highlighted by Bakker (2007, 2010), who has argued that the framing of water as a human right is a limited strategy to meet progressive goals and is particularly ill-suited to resist ongoing water privatization. In particular, Bakker argues that the framing of water as a human right is potentially compatible with privatization schemes—making it fundamentally flawed to deal with water challenges related to ongoing processes of neo-liberalization in developing countries. There are also more general concerns with the individualistic, Western, state-centric, anthropocentric, and universalistic bases of “rights talk” (see also Parmar 2008; Redgwell 1996). Whilst acknowledging these critiques, the research will maintain the framing of water as a human right.

The choice to frame water as a human right, in spite of (and noting) the criticisms of this framework, is based in both the recognition of the emphasis on ensuring human rights compliance in all international agreements articulated by the United Nations, including through the Sustainable Development Goals. Additionally, though, the research aims to demonstrate that traditionally understood Islamic precepts and *hadith* regarding water - like earth and fire - as *res communis*, a resource that should be shared equitably amongst all members of the community, and the political and power settlements that have subsequently been encoded into Islamic legal systems regarding water usage and distribution, are in fact deeply aligned with modern conceptions of human rights, economic and social rights in particular. In laws governing water - and water distribution in particular - Islam has consistently, as Wilkinson (1990) states, tended to "take the side of the small man and does everything it can to protect



him". Moving from the mutual and binding rights and responsibilities of what Ibn Khaldun in the 14th Century defined as the *asabiyya* - the social cohesiveness of Arab society - Islamic law and governance has consistently acted to ensure that non-powerful actors have the same access to water as ruling classes and landlords. Such an understanding of the right of individuals to water is very much in accord with modern framing of the 'human right to water'.

## Chapter 2

### Transboundary Groundwater Management in Muslim Majority Countries: Islamic Legal Principles, International Law and Practice

Much attention has been paid within the MENA region to the stalled progress towards any kind of regional cooperation agreement on shared groundwater resources, but, as noted below, this has almost entirely focused on secular legal instruments, without addressing the issue of how those instruments could be aligned with Islamic legal principles. Given the increasing desire of MENA countries to articulate Islamic theories and practices of statehood, it is important to offer examples of how the issue of transboundary aquifer management - which is also intensely politicised, given the competition over water resources in the MENA region - can speak to common values and socio-political aspirations *vis-a-vis* the development of an Islamic identity for statehood and alignment with international law. The focus on groundwater resources – as opposed to rivers, lakes and other surface waters – has been chosen because whilst literature and research in this area is in general limited, the majority of available existing literature is focused on surface waters, with little attention paid to groundwater resources – even though, within the MENA region, groundwater resources are being depleted at unsustainable rates (Voss and Famiglietti, 2013) and are estimated to be the source of over half of the water used across the region for household, agricultural and industrial use (Khater, 2002; World Bank, 2017).

The focus on surface, as opposed to groundwater, is similar in international and bi-lateral legal agreements; multiple agreements exist regarding shared river basins, between Muslim-majority States, compared to a small number of mainly informal water-management agreements and structures focusing on groundwater. The Cooperation agreements established to manage the North-Western Sahara Aquifer System (NWSAS) between Algeria, Libya and Tunisia, for example, are not based in treaty law or binding bi-lateral agreements: The NWSAS is managed through a permanent tripartite consultation mechanism hosted by the Sahara and Sahel Observatory (OSS). The main objective is to coordinate the joint management of water

resources in the NWSAS through ongoing work to improve understanding of the system and its exploitation. This is done through a steering committee made up of the bodies in charge of water resources in each of the three countries, which act as the national focal points; a coordination unit that is managed and hosted by the OSS; and an ad hoc scientific committee for evaluation and scientific orientation (Fanack Water, 2021). Whilst an excellent example of cooperation and coordination over shared groundwater resources, the lack of a binding legal basis for cooperation is notable.

In examining these issues, this research aims to inform discussions amongst scholars and practitioners concerned with both water management and political science and governance in the MENA region.

### ***Sources of Islamic Law and Guidance on Water Governance***

Water, its purposes, usages, and the principles of water conservation, are contained throughout Islam's teachings as found in its primary source texts: The Qur'an and the *Sunnah*, or normative Prophetic practice, which are both considered as legally binding precedents on believers. In simple terms, Islamic legal tradition has developed (and continues to develop) two broad categories of sources for what is understood as Shari'a. '*Usul*' are the 'roots' of the law, broad and theoretical principles – including articulation of procedural norms – which give rise to *furu'*, the 'branches' of applied, jurisprudential rulings – *fiqh* - on specific issues and situations (Hallaq, 2001; Kamali, 2008). In classical Islamic teaching, Shari'a refers to the law of God and its divine quality, and *fiqh* to the specific interpretations and means of understanding and applying the will of God and the Prophet as expressed in Shari'a (Sheibani et al, 2017). Although this paper will generally refer to academic work and the writings of Islamic jurists on Shari'a and Islamic legal guidance a whole, it should be noted that there are in fact four clearly differentiated schools of *fiqh* in Sunni Islam, and two in Shi'a Islam. Academic and political debate around the differences between these schools is rich and extensive. Examining these differences in detail, or exploring the argumentation for the validity of one school's approach over another's is beyond the scope of this research. Overall, however, these differences are not of major significance for the purposes of examining Shari'a, *fiqh* and water governance in the Islamic world as it relates to the management of transboundary water resources, other than in the different approaches to the concept of ownership of water sources they articulate, which will be examined below in the sections exploring broad Islamic

principles which have been interpreted by scholars through an environmental lens, Islamic teachings on water in general and issues such as access to water, ownership of water etc., and address the existing literature in this area.

### ***Water in the Qur'an and Sunnah***

References to water appear numerous times in the Qur'an. Islam "ascribes the most sacred qualities to water as a life-giving, sustaining and purifying resource" (Catovic, 2020, pg.1). The Arabic word for water, *mâ'*, appears 63 times throughout the Qur'an. In addition, water is frequently referenced through mention of rivers, seas, fountains, springs, rain, hail, clouds and winds, etc (Zaharuddin and Sabri, 2005). In making multiple references to water and its derivatives, the Qur'an is not unique amongst the holy texts of the world's religions; for example, the Bible references water and associated entities such as rivers, seas and clouds 722 times, and the Bhagavat Gita has 12 verses devoted to water (Hitzhusen and Tucker, 2014; Oestigaard 2005). Given that the religion of Islam began, and predominates overwhelmingly, in some of the most arid parts of the earth and that regular washing is a religious obligation for Muslims and a ritual necessity before acts of worship, it is little wonder that Islamic Law dealt with the issue of water in considerable detail (Zaharuddin, 2005; Solomon, 2010).

The Qur'an establishes the right of every individual to water. There are two basic Shari'a concepts that refer to water rights of individuals and communities in Islam: *shafa*, the right of thirst, which establishes the right of human beings to quench their thirst, and also the thirst of their animals; and the *shirb* which is the right to irrigate lands (Faruqui et al, 2011; De Chatel, 2021). Although these concepts are interpreted in slightly different ways by the various schools of Islam, and their practical implementation varies from region to region to adapt to geographical and social circumstances, the overall conceptual rights they establish are well established within the Islamic world (De Chatel, 2021). These concepts establish the overarching principle that individuals have a right to access water, but, as will be explored later, although this broad right is qualified by considerations regarding the use of that water and needs of others. When considering Islamic principles and legal guidance on water usage, these rights are always balanced with obligations related to three main Shari'a principles: *Khilâfa* - man's role as a steward of natural resources, *Tawhid* - which directs man to always observe the principle of unity, including, it is increasingly argued by Islamic environmentalists and scholars, between man and his environment, and *Amanah* – the principle of trust and

responsibility. It is not sufficient for an Islamic model of transboundary groundwater management to focus exclusively, on the concepts of *shafa* and *shirb*; rather, any such theory must focus on the mutual obligations arising from observance of *tawhid* and *khilâfa*. This argument is developed in greater detail in chapter 4, but first it is necessary to examine the principles of *tawhid*, *khilâfa* and *amanah* and their relationship to water. Much as human rights are regarded as interlinked and interdependent, so these Islamic principles of *tawhid*, *khilâfa* and *amanah* are very closely interrelated, and work together to provide a coherent overall conceptual framing of man's responsibilities in managing water (and all natural resources). Together with the *shafa* and the *shirb*, they form the core 'Usul from which specific rulings and guidance – *furu'* and *fiqh* – on the management of water resources can be and are developed.

### ***Tawhid***

Allah, in the Qur'an says, "To Him belongs whatever is in the heavens and the earth; all obey His will and it is He who originates creation..." (Qur'an 30:25). The principle of *tawhid*, in its narrowest interpretation, articulates both the oneness or unity of Allah (Choudhury, 2019) and also, in traditional Islamic jurisprudence and thought, emphasised the monotheistic nature of Islam and the belief that Allah is the one true God, and Islam the one true religious faith (Kounsar, 2016; Philips, 1990). Scholars of Islamic ethics such as Lubis have elaborated upon the general principle of unity to assert that *tawhid* is the core of the oneness of the Creator from which everything else follows (Lubis, 1998).

As environmental concerns, and in particular those related to climate change, have risen in prominence in the Islamic world in the last 30 years or so (Koehrsen 2021; Dien, 1997, 2000, 2013), Islamic scholars and environmental activists have engaged in exegesis to develop the theory that the principle of *tawhid* shows the interconnectedness of human beings and nature, including natural resources such as water (i.e., Khalid, 2002; Gade, 2019). Dien argues that *tawhid* is in fact the most important principle through which man's relationship with the environment should be understood (Dien, 2000). Following from the imperative to respect *tawhid*, many scholars have focused on the numerous verses of the Qur'an which emphasize the unity, balance, order and harmony of the natural world and environment in the natural setting of this universe. They argue that the principle of balance (*al-mizan*) not only governs the structure of the universe as a whole, but accords each element of that natural universe with

a defined function and proper place and setting (Rafiq and Ajmal 1997). Kamali develops this thinking further. Citing in particular a Qur'anic verse that illustrates an intricate environmental balance of the universe -

The sun and the moon follow courses (exactly) computed; and the herbs and the trees - both (alike) prostrate in adoration. And the Firmament has He raised high, and He has set up the balance (of justice) in order that ye may not transgress (due) balance (Qur'an, 9:71) -

Kamali argues that Allah guides man to respect the complex interdependence of the natural world and the necessity of maintaining balance within ecosystems (Kamali, 2010), and in thinking which echoes the understanding of Nasr (1997) on the obligations inherent in man's role as steward in the *khilâfa*, states that mankind has a positive obligation to protect and preserve the environment and natural resources, and in protecting the environment from degradation so that the balance (*al-mizan*) created by God can be preserved. (Kamali 2010). Examining the specific environmental issue of climate change, Koehrsen (2021) identifies *tawhid*, alongside *khilâfa* (examined below) as being the two main principles that Islamic scholars refer to in the development of Islamic environmental theory.

Although these theorists have not focused so much upon water as the environment and natural resources as a whole, and often on climate change as a specific phenomenon within environmental politics and studies which is of particular interest to MENA countries (Koehrsen 2021; Dien, 1997, 2000, 2013) this interpretation of the application of principles of *tawhid* to environmental management holds obvious potential when exploring Islamic models of managing transboundary water resources shared between Muslim-majority countries. As the effects of climate change accelerate, and in arid regions such as much of MENA will be felt through impacts on water supply (Taheripour et al/World Bank, 2020) this connection can only become more important. In reminding States of their obligation of submission to the will and purpose of Allah in and through all his creations, grounding shared imperatives for the responsible management of natural resources in an understanding of unified action in the service of *tawhid* is one of the areas to be developed in chapter 4.

The principle of *tawhid* has been interpreted expansively in disciplines other than environmental studies and science. The Iranian scholar of political science and journalist, Mahmood Delkhasteh, argues that Islam, and in particular political Islam, has long been

defined by a binary division between what he labels ‘Power-based’ and ‘Freedom-based’ Islam (Delkhasteh, 2007, 2010). Power-based Islam - and the systems of government that arise from it – focus primarily on citizens as duty-bound subjects, obligated to follow the rulings of a select group of religious authorities, an arrangement which ‘justifies the control of state and society through force’ by mimicking the obedience demanded of man to a unitary God and universe (Delkhasteh, 2007, 2010). He notes that within the context of post-revolutionary Iran, power-based Islam, as championed by Ayatollah Khomeini and more recently by Ayatollah Misbah Yazdi, has been cemented as the interpretative framing for *tawhid*.

Freedom-based Islam, as Delkhasteh labels it, represents a body of theological and political thought by Muslim scholars in which *tawhid* is interpreted very differently. Within Iran, theological thinkers and politicians such as Ayatollah Mantazeri, and Abol-hassan Banisadr – the President of Iran between 1980 and 1981 – have defined *tawhid* as the absence of all power in the relationship between God and humans, people with each other and people with the environment. According to this interpretation, through a relationship with God. *Tawhid* liberates mankind from relationships that limit and confine, and provides people with a guiding Qur’anic principle that is compatible with their independence and freedom (Banisadr, 1992; Delkhasteh, 2007, 2010; Schroeder 2017).

The work of Delkhasteh and Banisadr is concerned, primarily, with Iran, and as such, is focused on Shari’a and Qur’an within the Shi’a tradition. Within the Sunni tradition, scholars such as Alam (2018) and Al-Jarhi (2017) have identified a prevailing interpretation of *tawhid* that is similar to what Delkhasteh defines as ‘Power-Islam’, identifying its origins in the Islamic ideology of Wahhabism in the 18th century and perpetuated through Saudi-sponsored Wahhabi-Salafist hegemony throughout the Middle East and in particular the Gulf Region (Alam, 2018).

One final area in which innovative interpretations of *tawhid*, focused on social justice and structural arrangements within Islamic societies, is regarding feminism and the position of women in Islam, and Islamic communities. Work in this area was most famously pioneered by Amina Wadud, notably in her book *Inside the Gender Jihad*, published in 2006. In this and subsequent works, Wadud articulates a feminist hermeneutical method to interpret the Qur’an which she called ‘*Tawhidic Paradigm*.’ Wadud’s hermeneutical approach explicitly interrogated traditional, patriarchal readings of the Qur’anic verses that privileges one sex over another. According to Wadud, in understanding the Qur’an three principles should be

considered, namely: first, the context in which the Qur'an was revealed; second, the grammatical composition of the text; and third, the whole text and the world-view it embodies (Wadud 2006; Riyani, 2017).

Wadud's work was highly influential in both Islamic and gender studies, and to this day has given rise to an extensive body of literature. Neither the *Tawhidic Paradigm* nor Wadud's wider body of work have been universally accepted, with feminist Islamic scholars such as Aysha Hidayatullah (2014) challenging Wadud's readings of key Qur'anic verses, and with male religious authorities in several countries calling for a ban of her work or calling on governments to prevent her from entering their territory – successfully, in the case of the United Arab Emirates in 2019.

Initially, these examples of differing interpretations and possible applications of the principle of *tawhid* outlined above may seem to present more challenges than inspiration for centralising *tawhid* in the potential basis for Islamic Theories of Transboundary Aquifer Governance which will be elaborated in chapter 4. Whilst acknowledging the prevailing hegemony – in both Shi'a and Sunni majority countries – of traditional, vertical theories of governance and power that offer limited space for the introduction of new normative paradigms beyond traditional religious and political authorities– what Delkhasteh would define as 'Power-Islam' - and recognising the relatively immaturity of theories of *tawhid* developed around gender and environmental issues, grounding possible Islamic theories of groundwater governance in *tawhid* nevertheless presents potentially useful means of developing theoretical approaches to the challenge of managing such resources between Muslim-majority States. Within the context of academic and activist-led dialogue and literature, such an approach aligns well with the emerging body of thought and literature which seeks to re-orient interpretations of *tawhid* to focus on the elements of unity and inter-connectedness and apply this to contemporary concerns such as climate change, environmental management and gender relations.

In addressing wider political and normative concerns within the Islamic world, *tawhid* is a useful conceptual anchor in that it is a universally recognised '*Usul*' which explicitly emphasizes the 'oneness' of both God and the universe -including the earth and its resources – and is closely associated with a belief in the mutual obligations of Muslims implied by the *Ummah* (Ali, 2006; Bakar, 2012). Aside from addressing the gap in the existing literature regarding Islamic theories and perspectives on the management of groundwater resources between Islamic countries, this research aims to also provide a new perspective through its focus on *tawhid*, as



opposed to *khilâfa*, in addressing water management and governance issues in the Islamic world in part, through suggesting linkages between the concept of the *Ummah* – the global community of Muslims – and *tawhid* in creating potential frameworks of mutual obligation with regard to shared water resources.

### ***Khilâfa***

In the teachings of the Qur'an, the emphasis is on water as a source of life – not just for man, but for all living creatures (Amery, 2001). God has permitted the management of natural goods - including water - to human beings, who are granted the rights and duties of stewardship - *khilâfa* - over them, as a means of testing their willingness and capacity to handle their indebtedness to God (Din, 2010; Fakhry 1994). The principle is stated explicitly in chapter two verse thirty, where Allah says, “And lo! Your Sustainer said to the angels: Behold, I am about to establish upon earth a *khilâfa* ” [Qur’an, 2:30].

Some Islamic scholars, pursuing a growing concern with environmental issues within the Islamic community, have interpreted this *khilâfa* as binding man to a form of contractual obligation towards God for his management of the natural environment. Mohamed proposes that Allah examines mankind’s fairness and justices over things under his stewardship including the natural environment, e.g., rivers, lakes, groundwaters, etc. (Mohamed, 2012). Muyibi develops this thinking to argue that *khilâfa* requires man to avoid over-exploitation, misuse, abuse, destruction and pollution of the environment and natural resources, and that this protection is actually a religious obligation upon every Muslim as important as moral and religious obligations of altruism, generosity, mutual understanding and cooperation. In this understanding of man being held bound to use natural resources proportionately and wisely, and man’s responsibility to ensure the protection of others’ vested interest(s), Muyibi again echoes the thinking of Kamali and Nasr on the obligations inherent in man’s role as steward in the *khilâfa*, stating that mankind has a positive obligation to protect and preserve the environment and natural resources, and in protecting the environment from degradation so that the balance (*al-mizan*) created by God can be preserved (Muyibi et al, 2010).

Nasr maintains that mankind, as stewards (or the term he uses, viceregents) of God’s creations must preserve and protect their environment and natural surroundings with the same care that

God has invested in it, advocating for a responsibility to leave the natural environment as close to the condition on which it was created as possible (Nasr, 1997). Nasr even goes as far as to suggest that a Muslim who is bound by the *khilâfa* but who chooses to disregard its obligations - including those towards natural resources are “God-like but execute *destructive* dominion over the earth since this dominion is devoid of the care which God displays towards all His creatures” (Nasr 1997, emphasis mine). For Nasr, the concept of *khilâfa* is inseparably bound to the principle of *amanah*, examined below; together, these principles create an unnegotiable imperative for humans to manage natural resources in a responsible, equitable manner. Other Muslim thinkers have focused on the intergenerational responsibilities inherent in the principle of *khilâfa*. Jaria (1999) and Maidin (2010) note that God created the earth for all mankind, not just for the generation presently living, but for future generations, and that his stewardship of the earth and its natural resources must reflect this.

### ***Amanah***

In literal translation, *amanah* refers to trust and trustworthiness. However, it is intimately linked to the principle of *al-mas’uliyah* - responsibility – and many Islamic jurists and scholars regard the link as so strong that when discussing *amanah*, they are referring to a concept that includes both principles (Shuhari et al, 2019), which is the interpretation I shall use in this analysis. *Amanah* arises from the trust in man offered by Allah, and the responsibility man undertook in accepting this trust. The Qur’an, in Chapter 33, verse 72, states that:

“Verily, we did offer the *amanah* to the heavens and the earth and the mountains; but they refused to bear it Yet man took it - for, verily, he has always been prone to tyranny and foolishness” [Qur'an 33:72].

The traditional interpretation of Islamic scholars with regards to *amanah* is that as steward or vicegerent of God, man has to fulfil his trustee responsibility by acting justly according to the wills of Allah, or he risks disobeying God’s commands and trust in him by committing injustices against God’s creation such as causing the extinction of species and habitats and the over-exploitation and over-depletion of natural resources – including water (Gada, 2014). Ammar (2005) expands upon this theory of *amanah* by noting that man holds responsibility for nature and natural resources both as a manager of the environment around him, and as a

user of natural resources – using examples of water usage - such as the use of using freshwater for irrigation, household and commercial purposes.

These examples and analysis establish the broad and overarching principles for the management of water resources which already exist in the Qur'an, Sunnah and in the work of Muslim jurists and scholars. These principles are the roots – '*Usul* – of any potential Islamic legal theory of transboundary groundwater resources will need to grow from. By their very nature, the *furu'* - branches – that such a theory would find itself both drawing upon, and developing alongside, would be more specific and focused, arising from both *fiqh*, and, more contingently, from existing State policy and practices of water management, whether or not those be explicitly informed by Shari'a. To illustrate how this may operate in developing an Islamic legal theory of transboundary groundwater resources, I shall focus on the issue of water ownership within the Islamic tradition. Although the jurisprudence and *hadith* related to water ownership have developed almost exclusively within the context of bodies of water contained within the territory of one community or State, and not addressed questions of ownership of transboundary, international bodies of water – and not, to date, at all on transboundary groundwater, it is nevertheless useful guidance.

### ***Ownership of Water in Islamic Law and Tradition***

As many scholars have noted (i.e., Naff, 2008; Gade 2019), Islamic jurisprudence has traditionally understood that water, land and crops are intimately linked, and as such, the treatment of water rights in Islamic tradition and law has focused mainly on the governance and treatment of quantities of water related to a given agricultural sphere of influence (Naff, 2008, Feldman 2017), and as such are focused on questions of ownership within, as opposed to between, States. This very practical and localised focus of the *hadith* and *fiqh* may perhaps be one of the reasons why relatively little reference to Islamic law has, to date, been made by Muslim-majority countries when negotiating agreements on shared groundwater resources, aside from political considerations regarding the appropriate reach of Shari'a in national and international policy, and the lack of a widely recognised and agreed upon international mechanism for adjudicating Islamic law. As has been noted by Sheikh (2013), political Islam has focused very much on the State (singular) and defining what that means, as opposed to how

that State relates to other States or fits into an international order. Sheikh goes so far as to suggest that “Rather than explicit guidance or a separate body of law, international relations in Islam is an extension of law regarding Muslim and non-Muslim interaction at a personal level” (Sheikh, 2013, Pg.3). This is an important reflection for this work, which will be examining in detail principles and rulings on water use and distribution defined at community and personal level, and suggesting extrapolation of the principles they embody to State level.

By the teachings of Shari’a, water in its natural state is considered a common property, with clear principles for determining priority of usage that apply to all. For example, if there is a large naturally-occurring river, where the water is permanent, then these may freely be used by anybody for watering livestock, irrigating land etc., and channels may be dug from them. These broad principles of Shari’a, whilst guiding that if there is a river which contains insufficient water, then those close to it have priority over others, do not make clear distinctions between upstream and downstream water sources and attendant rights. This is an interesting omission considering the impact upstream channelling and irrigation can have on water availability downstream, especially in arid regions. Joseph (2020) argues that in many Islamic societies, context specific decisions on matters such as upstream/downstream riparian rights were deferred to local level jurists. In particular citing examples from seventeenth- and eighteenth-century Syria – as part of the Ottoman empire – Joseph shows that decisions on upstream and downstream irrigation rights were often decided by local level jurists, working from the writings of, amongst others, Mubibb al-din al-Hanafi (1542-1602) and the well-known eighteenth-century mufti and scholar of Damascus ‘Abd al-Ghani al-Nabulusi (1641-1731). She also notes that this often resulted in undesirable outcomes for downstream users, as a result of the jurists cautious and conservative approaches which tended to favour the status-quo – but that more positively, these jurists often proposed solutions that encouraged and supported greater community involvement in, and responsibility for, water resources management (Joseph, 2020).

The focus on proximity to a water source, and willingness to rely upon local-led solutions to questions of upstream/downstream access and rights, is one of the areas where Islamic law and traditional practice contrasts quite sharply from the development of national law on water rights and the first international legal agreements on water – and especially surface water. These laws have tended, on the whole, to favour the ability of upstream states to exercise their rights of

access and usage with limited consideration of downstream users, and, as Tarlock (2010) notes, create a

“gap between the law's aspiration to guarantee all riparian states a fair share of available, shared waters and the incentives for more powerful and wealthy states to take unilateral action that prejudices competing claims and threatens the well-being of those up-and downstream who rely on the water” (Tarlock, 2010).

Recalling the suggestion that International Relations in Islam is, as Sheikh (2013) put it, often an extension of law regarding Muslim and non-Muslim interaction at a personal level, it is interesting at this point to note that The Convention on the Law of the Non-Navigational Uses of International Watercourses (1997) contains several provisions which require State Parties to take due consideration of the water needs and rights of other States which share a watercourse, but overall still defers to States' rights to define appropriate usage for themselves, and does not explicitly prohibit a State – upstream or downstream – from taking actions – such as damming and diverting watercourses – without consulting other States that share that watercourse. In this sense, perhaps, one can draw a parallel with the decisions of the local jurists examined by Joseph (2020), who tended to defer to the status quo and in doing so, solidify existing power relationships, to the detriment of downstream users – and also note the congruence between existing International Law and Islamic Law and tradition. As noted below, private ownership of water is in Shari'a regulated through obligations to meet the needs of others and recognise their 'right of thirst', however these obligations are mainly directed at private, individual owners, as opposed to States or communities.

On the basis of specific judgements of the Prophet, and of the early caliphs after him, the jurists set out explicit general and detailed rulings concerning differing categories of water, and in particular differentiated between water for drinking and ablutions to be used by humans, drinking water for animals, and water for use in agriculture and irrigation. As such, framed within this broad understanding of the obligations inherent in *khilâfa*, Islamic jurisprudence has identified a clear categorisation of sources and hierarchy of usage, with priority to be given to human uses first – with equal importance placed upon water for drinking and for performing ablutions – noting that, as will be explored later, water that falls into this category is itself subject to a series of strict sub-classifications concerning purity - then for animal uses and lastly for agriculture purposes (Zahari et al, 2021; Gade 2019).

The conception of water as a common good, that everyone has a right to (a right, one could even suggest, that is extended to animals) but which can nevertheless be subject, on a local level, to ownership and management, is well established across all of the schools of Shari'a and is not contested. Within this overall conceptual understanding, detailed juristic applications and *fiqh* have established a distinction between public and private sources of water, and created a space for limited forms of ownership and - in modern times - privatization of water. These vary between schools of *fiqh* in the Sunni and Shi'a traditions, but there is a common understanding that some forms of ownership of water – and control of its uses, as well as access to some sources of water – are permitted. As will be explored in greater detail below, this conception and legal framing of water aligns closely to the secular formulation of water as a human right which it is nevertheless permissible, providing certain conditions obtain, to privatise and regulate access to. This framing of the human right to water and the inherent State obligations with regards to responsible stewardship of water it creates has existed for many years, and was reaffirmed, and given extra emphasis, in the Sustainable Development Goals in 2015.

That this respect for ownership and forms of private water exists within Islam is perhaps surprising, given that the Prophet Mohammed stated that "Muslims have common share in three (things): grass, water and fire" and, to prevent any attempt to appropriate water, he prohibited the selling of it. The specific *hadith* related to this states "Allah's Messenger forbade the sale of excess water" (Yahya ibn Adam 1896, 75). However, the *hadith* did not elaborate further, and, as noted, "We do not know whether he meant flowing water in nature (in rivers and lakes) or transported water with added value", the majority of Muslim scholars and jurists have concluded that water could be sold like any other commodity (Zouhaili 1992; Caponera 2001). To establish correct ownership, these scholars have identified three broad categories of water which can be described using terminology from modern economic and political theory and which reveals a conceptual categorisation that is similar to that employed in many cultures (Kadouri et al, 2001; Sabeq, 1981; Zouhaili 1992).

In simple terms, Shari'a as interpreted by most Muslim scholars subdivides water resources for the purposes of establishing correct ownership into three categories (Sabeq 1981; Zouhaili 1992): private goods, restricted public goods, and public goods.

Water stored in private containers, private distribution systems, and reservoirs situated on privately owned land is, in the majority of *fiqh* within both the Sunni and Shi'a traditions, considered as a private good. This would include water that has been extracted from wells, rivers and groundwater resources, whether through the simplest forms of collection – i.e., by directly taking water from its source by use of a basic container such as a bucket – through to water obtained by using highly specialised equipment and labour. It also includes water that has arrived in a household via the distribution systems of private water companies. This water belongs to its owner and cannot be used without his permission, and as the owner, he is allowed to use it, trade it, sell it, or donate it. Perhaps the only activity he is not permitted is to waste the water, As Nadwi explains, however, even though this water is private, a person in need can use it after asking for and being granted the owner's permission, and the owner is legally obliged to provide such water as alleviates the urgent need (Nadwi, 2020; Kadouri et al 2001; Caponera, 2001) note that treated water can be traded because the organization or individual responsible for the treatment has spent money and invested work in it, and in doing so has added value to it. The sale and use of treated water, however, is the subject of some debate within Muslim Majority countries, as many scholars believe that the use of treated water risks violating the elaborate system of rules governing the purity of water, which elaborate in detail which types of water are permissible for use in ablutions and household tasks (See, for example, Zahari et al, 2021). Thus, whilst the trade, sale and use of treated water is not prohibited *per se*, it can be subject to demanding conditionalities.

If a body of water such as a lake, stream, or spring – but not a river - is located on private lands, it is considered to be restricted public goods. This water does not belong to its owner in the large sense of ownership; rather, the owner merely has special rights and privileges over other users. An exception to this understanding exists within the Shafii school of *fiqh*, which believes that whoever digs a well owns its water outright, which renders that water a private good – with the same obligation to meet the right of thirst (Kadouri et al, 2001). From the available

literature on this, this teaching would seem to be applicable to wells specifically (as opposed to a pond constructed by a landowner, for example) (Kadouri et al, 2002; Naff, 2009). For instance, other users can apply to the owner to use this water for drinking and urgent needs, and he is obligated to permit this use, but the owner is not obligated to grant use of the water to others to use it for agricultural and/or industrial purposes (Nadwi, 2020; Zouhaili,1992).

Should the owner decide to allow diversion of water flows – for rivers on her/his property as well as lakes, wells and ponds - for irrigation or other purposes, the rights of the ‘owner’ are balanced by a legal responsibility for downstream effects on other actual or potential owners and users of the flow, and for any effects on the flow as a whole. The rights of the ‘owner’ are therefore conditional on reasonable use, and may be challenged if the use is harmful (Nadwi, 2020). Rahmani (2017) documents several *fiqh* concerning such situations, although does not document the outcomes arising from these rulings. This injunction on reasonable use, with specific guidance on the correct management of diversion of a restricted public good, is a perfect example of the development of a precise *furu’* – branch – of law, from a broader principle, or *‘Usul*, or root – in this case, the *‘Usul* being the principle of *tawhid*.

Water that is contained in rivers, lakes, glaciers, aquifers and other groundwater bodies, and seas, and from snow and rainfall is a public good. These forms of water can be used – subject to the conditions for correct usage in purification and ablutions etc., and mindful of the prohibition against wastage – by anyone, for any purpose, including drinking, agricultural and industrial uses, as long as, in line with the principles of *tawhid* and *amanah*, this use does not hinder environmental or public welfare. The government cannot prohibit use of this water (although it may regulate that usage) unless it can prove that the proposed usage would harm the public welfare, do damage to the environment, irreparably deplete a water source, or be the subject of illegal and/or unfair trade practices (Kadouri et al, 2001). Rahmani (2017) has documented several specific *fiqh* in which it was ruled that the overall right to access water was only qualified by consideration of the prohibitions on wastage and damage/pollution etc. Whilst Shari’a does not contain specific guidance on governance mechanisms regarding these public waters, individuals would, as with all matters, be able to avail themselves of local-level jurists to provide a ruling on whether a particular practice of policy was Shari’a compliant (noting the potential biases and inequities such a route may perpetuate as discussed by Joseph (2020). Water falling in this category cannot be sold or bought for private interest (Zouhaili



1992). However, if water is drawn from this form of source, and is subsequently treated, purified, stored, bottled and/or transported, then it is to be treated as a private good because of the value added by these processes, and can be sold or traded, as long as that sale respects the overarching Islamic principles and rules governing trade and markets, which prohibit speculation and manipulation of the market to maximise profits (Kadouri et al, 2001). Further, there is broad agreement amongst scholars that governments can and should intervene to regulate prices to prevent water becoming too expensive for ordinary consumers, and that if the interests of owners/sellers and consumers clash, then any solution must favour the rights of consumers (Sabeq, 1981).

### ***Existing Analyses of the Relationship between Shari'a and Water***

From a review of the available literature, analysis of potential application of Shari'a as a legal framework for environmental issues is limited (although growing), and no significant research has attempted to examine the issue of transboundary aquifer governance through this lens has been undertaken since the very early 2000s. A body of literature exists which examines extant law on water usage and distribution in Islamic countries - for example, Dante Caponera, whilst engaged with the United Nations Food and Agriculture Organization (UNFAO) in the 1960s and 1970s wrote a series of detailed reports on water laws in African and Middle-Eastern countries, and in the 1980s and 1990s scholars such as John Wilkinson and James Westcoat also examined water (and land) usage laws in the Islamic world. However, the work of these scholars does not attempt to analyse groundwater resources specifically, nor does it engage with the issue of potential compliance with both Shari'a and international human rights and water law, the specific focus of this research.

In 2001, the United Nations University published the study 'Water Management in Islam', edited by Naser I. Faruqi, Asit K. Niswas and Murad J. Bino, compiled following a series of workshops in the MENA region analysing multiple aspects of the relationship between Islam and Water. The paper included attempts to examine specific areas such as "Lifeline water tariffs, water conservation, water reuse, community-based water management, fair pricing, and water management" (Faruqi et al, 2001). Although the final chapter of the paper looks briefly at international law and general Muslim principles regarding water in the context of shared resources, it does not attempt to analyse how Islamic frameworks for water governance would

operate between states, or concerning shared bodies of groundwater; indeed, it notes that there is a “lack of literature on Islamic perspectives related to shared waters, and further work is needed to develop an Islamic water management policy that covers shared waters” (Faruqui et al, 2001). This research aims to contribute to that body of work, drawing where relevant from the broader analysis contained in the paper, and developing and elaborating upon it to examine transboundary water governance issues between Muslim-majority countries.

In her recent publication on environmentalism and Islam, Anna M. Gade (2019) provides valuable analysis of broader theories and interpretations of Islamic environmental law and justice, including some analysis of Islamic law and precepts surrounding water usage, which offer a useful contextual perspective for considerations of how an Islamic theory of transboundary water management might be developed. Having examined the wider history of Islam and the environment, including growing collaboration between Islamic academics and theoreticians and environmentalist activists, Gade notes that Islamic legal guidelines often “resemble environmental law as in Anglophone tradition” (Gade, 2019, Pg.132) and that Islamic environmentalists develop positive theories of obligation and practice towards water from branches of *fiqh* related to wider principles – a similar approach to that which will be developed in this work, in chapters three and four.

### ***Groundwater and Transboundary Aquifer Management and Policy in the Middle East and North Africa***

Although one of the earliest known examples of a water treaty originated in the Middle East some 5000 years ago, between two city-states within Mesopotamia (Dinar et al, 2013), little progress has been made to establish a regional agreement on cooperation and coordination of groundwater and transboundary aquifer management in MENA in the modern era. This is despite the fact that the region has by far the highest level of groundwater depletion stress in the world (Amery, 2001; Voss, 2013) with several countries drawing on bodies of water that have a groundwater stress rate of more than 100% (WRI, 2019), which means these countries are depleting their groundwater resources. At present, only four major agreements exist regarding the management of groundwater and transboundary aquifers in the Middle East: the Convention between Syria and Lebanon on the Distribution of Al-Asi (the Orontes) River (1994), the Jordan-Israel Peace Treaty (1994), the Interim Agreement between the Palestine

Liberation Organization and Israel (1995), and the Agreement between the Government of the Hashemite Kingdom of Jordan and the Government of the Kingdom of Saudi Arabia for the Management and Utilization of the Ground Waters in the Al-Sag/Al-Disi Layer (2015). A larger number of bi-lateral agreements exist between MENA countries regarding shared surface water resources, but no regional agreements exist for surface water either.

The lack of structured legal agreements between the Muslim-majority countries of the Middle East and North Africa for management of groundwater resources - and transboundary aquifers in particular - arose in part from the significant gap in data with regards to water resources beneath the earth in the region (Lezzaik, 2016). Also, transboundary groundwater resources appeared as the last resort for many countries which –quite rationally- first intensified their efforts for expanding their utilization of surface waters, which is significantly cheaper to do, and carried less political risk, riparian and surface water rights being better covered by bi-lateral and regional agreements. Additionally, where available, countries focused on extraction from national groundwater sources, which did not require lengthy negotiations with another country, as sharing and utilization of transboundary aquifers necessitated.

However, as these existing sources of freshwater come under increasing strain, transboundary aquifers are under intense pressures for utilization. The 2021 report from UNICEF, ‘Running Dry’ cites factors such as rising agricultural demand and the expansion of irrigated land using aquifers, as well as migration of people from rural to urban areas, population growth, poor water management, deteriorating water infrastructure, and weak governance as contributing to the growing water crisis in the MENA region. As a result of these strains, eleven of the seventeen most water-stressed regions in the world are contained in the MENA region (UNICEF, 2021). Unregulated use can pose catastrophic risks particularly for so-called ‘fossil’ aquifers, which are not being replenished. These aquifers are of the greatest importance for some Middle East countries where a grave lack of water resources threatens the viability of states and societies. Aquifers of this kind simply represent the ‘water guarantees’ for future generations. Although it is doubtful that codification of legal principles on a regional level would bring about a regime of complete cooperation and preservation, it still holds a more promising potential for protection of these resources - and an equitable settlement for their utilization between wealthy states and those with less financial and political capital. The poorer countries, without large oil deposits, rely on their agriculture as the main source of income to the state (World Bank, 2018), with contributions from foreign development aid and retributions

from their nationals working elsewhere. For these countries there is little margin for error and no financial space for experimenting. Equitable solutions in groundwater management need to be sustainable and respected even in the short run, since capital for investment in alternatives is lacking. These States urgently need to continue entering into negotiations for sharing and protecting these vital water sources with countries that can wield far greater 'clout' (Daoudy, 2009).

The urgency of the task of increased cooperation between Muslim-majority countries in the MENA region regarding the management and preservation of transboundary aquifers needs, in turn, to be set within the context of a region that has shown somewhat limited appetite for participation in international legal conventions negotiated through bodies such as the United Nations, and has a historically limited commitment to regional organisations and cooperation. The League of Arab States may be the oldest regional organisation in the world, but it is also regarded as one of the least effective (Pinfari, 2009; Kruse, 2015). MENA country participation in international conventions overall is lower than other regions; this is most marked in the very low rates of participation in conventions related to human rights, but this low level of participation also obtains in environmental conventions and agreements. As I note below however, the relatively high level of ratification by MENA countries of The Convention on the Law of the Non-Navigational Uses of International Watercourses (1997), as well as their endorsement of soft-law instruments and declarations such as the Sustainable Development Goals and the Dublin Principles offers encouragement.

At the same time, the Arab League has moved very slowly on environmental issues; although the Arab League has signed agreements with the United Nations Environmental Programme (UNEP) on overall environmental protection and sustainability, in 1986 and 2014 - little has been documented to demonstrate impact. The Arab League in 2008 established the Arab Ministerial Water Council (AMWC), which has met five times since, but has focused primarily on technical matters, and research into preservation of water resources at national level, despite the original mandate to "prepare a draft legal framework on shared waters within the Arab Region". Although the council did indeed begin the process of drafting a Convention on Shared Water Resource, and much activity, supported and driven for the most part by the UN Economic and Social Commission for Western Asia, took place in the years 2009-2014, the process has since stalled, and there appears limited appetite for resumption of drafting such an agreement, with States in the region preferring to pursue bi-lateral technical agreements.

## *International Law*

Until recently, the predominant focus of International Water Law was on rivers, and riparian rights. Whilst the most important international legal treaties concerning water governance - The UN 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses and The UNECE 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes do not entirely disregard groundwaters, the attention paid to them is minimal, and because of the formulations used in these conventions, many transboundary groundwater resources fall outside their scope. This means, that to the present date, much of the world's groundwater falls outside of the international legal regime (Eckstein, 2017), despite the fact that groundwater is now the world's most extracted resource, and the source of just under half of all the water used globally for household purposes such as cooking, drinking and bathing (Margat and van der Gun, 2013).

Although the international community has attempted to address this issue, with the aim of developing an international legal regime similar to that contained in The Convention on the Law of the Non-Navigational Uses of International Watercourses and The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, but reflecting the specificities of groundwater resources, progress has been slow. The International Law Commission provided an initial roadmap for this work in 2008 with the adoption of the Draft Articles on the Law of Transboundary Aquifers, which were subsequently annexed to a United Nations General Assembly Resolution (UNGA, Sixty-third Session, Supplement No. 10 (A/63/10)). Since 2008, the UNGA Sixth Committee, as the organization's primary body for the consideration of legal matters, has on several occasions tabled resolutions to progress the work, but there has been no substantive work done in this regard (Burchi, 2019; Eckstein, 2017, 2021).

Even prior to the drafting and adoption of The Convention on the Law of the Non-Navigational Uses of International Watercourses and The Convention on the Protection and Use of Transboundary Watercourses and International Lakes, extensive work had been undertaken by scholars to define the principles – both *de jure* and *de facto* – guiding the governance of international rivers. In 1978 Utton and Teclaf identified five theories of international river governance that have remained the primary analytical framework additionally, there are five theories governing the use of international rivers (Utton and Teclaff 1978):

- Absolute territorial sovereignty (the Harmon Doctrine), which ascribes to upper riparian states absolute sovereignty over rivers flowing through their territory;
- Absolute territorial integrity, which guarantees to lower riparian states the use of rivers in an unaltered condition;
- Limited territorial sovereignty or equitable utilization theory, which permits use of rivers so far as no harm is done to other riparian states;
- Limited territorial integrity, which recognizes the existence of a community of interests among riparian states that gives rise to a series of reciprocal rights and obligations; and
- Drainage basin development or the community of interests theory, which stresses common development of rivers by all riparian states.

This last theory, of mutually responsible and cooperative development of watercourses by States for their common interests (Utton and Teclaff 1978; Loodin and Wolf, 2021), is widely accepted as having been adopted by the international community in their development and drafting of The Convention on the Law of the Non-Navigational Uses of International Watercourses, which was adopted by the General Assembly in 1997.

There is much in the convention which can be read as echoing the '*Usul and Furu*' – and in particular the rights and obligations implied by Islamic principles of *tawhid*, *khilâfa* and *amanah* as they relate to water, described earlier in this chapter. The Convention directs States to achieve a balance between the "equitable and reasonable" utilization of an international river by any individual riparian state (article 5) on the one hand, and on the other hand taking measures to avoid "significant harm" to other riparian states that are already using the river or may wish to use it in the future (article 7) – which would seem to be in harmony with the guidance provided by the Qur'an and Sunnah with relation to maintaining the natural balance established by God through responsible stewardship of those resources. The Convention stresses the riparian states' obligation to protect international rivers and associated ecosystems (articles 5,8,20, and 21) and obliges riparian states to co-operate in the optimal utilization and protection of the rivers that they share (article 8), which can be understood as an expression of the obligations that man has with regards to respecting the trust (*amanah*) God has placed in him concerning management of natural resources and the environment. This emphasis on cooperation is especially relevant to examining cooperation between Muslim-Majority

countries on this issue, given the requirements of *asabiyya* examined below. Perhaps the only article which immediately stands out as being in confrontation with accepted Islamic law and practice, is Article 10, on the relationship between different kinds of uses. This article reads: "In the absence of agreement or custom to the contrary, no use of an international watercourse enjoys inherent priority over other uses." Given the clear and hierarchical prioritisation of usage that is established in Islam (Nadwi, 2020), Muslim States would obviously need to make use of the latitude given by the language of the article to respecting 'agreement or custom to the contrary', citing the body of *fiqh* that have arisen following the general principles for water usage grounded in the Qur'an and *hadith*.

Although concluded in 1997, the Convention on the Law of the Non-Navigational Uses of International Watercourses took considerable time to accrue the thirty-five ratifications/accessions necessary for it to enter into force – which happened in 2014 with the accession of Vietnam. Since that date, only one additional country (State of Palestine) has ratified, although three have signed the treaty. Encouragingly, the MENA region is proportionally well represented amongst the thirty-six State parties to the Convention, with just under a third of all ratifications/accessions coming from either Muslim Majority countries in the region, namely Iraq, Jordan, Lebanon, Libya, Qatar, the State of Palestine, Syria, Tunisia and Yemen, and one consociational State with a significant Muslim majority – Lebanon. The absence of Iran and the most powerful Gulf countries (Saudi Arabia, the United Arab Emirates) is notable. Given the MENA region's relatively low participation in international conventions and treaties (discussed in greater length in chapter 3) and in Multilateral Environmental Mechanisms in particular, though, this proportionally high engagement with the Convention on the Law of the Non-Navigational Uses of International Watercourses perhaps reflects the growing importance of water insecurity and climate change in the region.

Aside from the Convention on the Law of the Non-Navigational Uses of International Watercourses, the main international legal instrument concerning water governance is the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (referred to informally as the Helsinki Convention) of 1992. This convention contains many of the same principles and areas of focus – equitable and reasonable use, non-pollution, conservation and sustainable use etc. – as the Convention on the Law of the Non-Navigational Uses of International Watercourses. Only forty-five States have become parties to the convention, and none from the MENA region, but this is probably attributable to the fact that



negotiation of the more comprehensive Convention on the Law of the Non-Navigational Uses of International Watercourses had already begun by the time the Helsinki Convention was opened to signatures and ratifications.

Aside from international treaties, MENA and Muslim Majority countries have relied almost exclusively on limited bi-lateral arrangements between States covering specific bodies of water, as opposed to regional agreements, to manage shared water resources; this is a trend that is not unique to the region, as globally the same situation obtains. So limited is regional, as opposed to bi-lateral cooperation, on shared water resources in the MENA region, however, that the 2011 UNDP led study *International Waters: Review of Legal and Institutional Frameworks* (UNDP, GEF, UCB, 2011) did not include a regional section on MENA, despite covering every other region. In a presentation examining progress on cooperation on water resources in the region that Ziad Khayat gave on behalf of the United Nations Economic and Social Commission for West Asia in Beirut, Lebanon, in March 2020, it was noted that no regional or multi-lateral agreements existed for any of the seven major river basins, or twenty-seven shared surface water basins in the region, even though these provide around two-thirds of the freshwater in the region, and that fourteen of the twenty-two Arab countries are riparian states with a shared watercourse (Khayat, UNESCWA, 2020).

One area that has seen greater take-up and participation in Muslim Majority states, and the MENA region in particular, is around the ‘soft-law’, non-binding principles contained in the Integrated Water Resources Management (IWRM) framework developed by the international community following the UN-led Rio Earth Summit in 1992. IWRM, as articulated in the Dublin Principles, the foundational document for IWRM, highlight the importance of water as a resource for environmental protection and human development. The Second Principle specifically focuses on the importance of water management being guided by a participatory approach, involving users, planners and policy-makers at all levels (Dublin Principles, 1992). The flexibility of the IWRM approach, and the fact it contains mechanisms and conceptual frameworks and planning tools that can be deployed at community and local levels, without the need for central government endorsement, is perhaps one of the central factors in its success (Brooks, 2007; Moriarty et al, 2010). With regards to developing Islamic models of governance and cooperation of groundwater resources, the ‘bottom-up’, local level applicability of the IWRM approach also reflects the focus in Shari’a and traditional practice in Islamic communities. In this regard, this research will be examining the potential lessons that can be



learned from IWRM and comparing these with learning from other areas – especially Islamic finance and financial services regulation – that have seen national and regional law and codes of practice arise from practitioner led initiatives to see how these may inform thinking about developing binding agreements on Shari’a compliant cooperation and regulation in other areas, in the next chapter.

### ***Congruence between Islamic Law and Teachings on Water Usage and the Framing of Water as a Human Right***

As noted in the introduction, the human right to water is the over-arching principle guiding the research. On 28 July 2010, through General Assembly Resolution 64/292, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights. The Resolution calls upon States and international organisations to provide financial resources, help capacity-building and technology transfer to help countries, in particular developing countries, to provide safe, clean, accessible and affordable drinking water and sanitation for all.

The GA Resolution followed several years of debate within the UN arising from earlier normative statements and analysis. In November 2002, the Committee on Economic, Social and Cultural Rights adopted General Comment No. 15 on the right to water. Article I.1 states that "The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights". Comment No. 15 also defined the right to water as the right of everyone to sufficient, safe, acceptable and physically accessible and affordable water for personal and domestic uses.

These commitments to water as a human right were further established as an international norm in the Sustainable Development Goals (2015). Goal Six is devoted to water - "Ensure availability and sustainable management of water and sanitation for all", with a series of targets and indicators related to the access to potable water by citizens, and an explicit target (6.5) regarding international cooperation for the management of transboundary water resources.

This framing of water as a human right presents challenges. Several thinkers have raised important concerns with the framing of water as a human right, including questions regarding responsibility for the delivery of the right to water to how it could be enforced (Mehta, 2000).

Similar concerns are highlighted by Bakker (2007, 2010), who has argued that the framing of water as a human right is a limited strategy to meet progressive goals and is particularly ill-suited to resist ongoing water privatization. In particular, Bakker argues that the framing of water as a human right is potentially compatible with privatization schemes—making it fundamentally flawed to deal with water challenges related to ongoing processes of neo-liberalization in developing countries. There are also more general concerns with the individualistic, Western, state-centric, anthropocentric, and universalistic bases of “rights talk” (see also Parmar 2008; Redgwell 1996). Whilst acknowledging these critiques, the research maintains the framing of water as a human right, both because of the emphasis on water as a human right in international agreements and resolutions articulated by the United Nations (including through the Sustainable Development Goals), and because of the strong resonance between this framing and the traditional understanding, and treatment, of water rights in Islam.

Traditionally understood Islamic precepts and *hadith* regarding water - like earth and fire - as *res communis*, a resource that should be equitably available to all members of the community, and the political and power settlements that have subsequently been encoded into Islamic legal systems regarding water usage and distribution, are in fact deeply aligned with modern conceptions of human rights, economic and social rights in particular. In laws governing water - and water distribution in particular - Islam has consistently, as Wilkinson (1990) states, tended to "take the side of the small man and does everything it can to protect him". Moving from the mutual and binding rights and responsibilities of what Ibn Khaldun in the 14th Century defined as the *asabiyya* - the social cohesiveness of Arab society - Islamic law and governance has consistently acted to ensure that non-powerful actors have the same access to water as ruling classes and landlords. Such an understanding of the right of individuals to water is very much in accord with modern framing of the 'human right to water' – and this congruence between traditional Islamic approaches to governance of water, and existing international legal instruments, will be returned to in chapter 4.

## Chapter 3

## Inspiration and Learning on Developing Cooperation, Management and Law for an Islamic Theory of Transboundary Groundwater Resources Governance

At the level of national political and legal discourse, many MENA countries are seeking greater alignment between 'secular' and 'technical' legislation and principles derived from Shari'a. Commentators such as Noah Feldman (2008), Wael Hallaq (2013), Iza Hussin (2016) and others have documented the interplay between Shari'a and politics in the codification of Islamic precepts and principles into national legislation and policy in the MENA region, both as it governs the internal politics and culture of nations and the relationships between those States (Feldman, 2008; Zubaida, 2003). As these scholars point out, although countries have increasingly developed an Islamic identity and theory of the State (Moussalli, 2001), with Shari'a nominally centralized, the actual reach of Shari'a in legal processes has been limited beyond family and ritual matters (An-Na'im, 2008; Hussin, 2016), with efforts to articulate Islamic rule through legislation in areas related to infrastructure and economic affairs only beginning to have real effect in the last decade or so.

In parallel with State-led initiatives to incorporate Shari'a into domestic legislation on family and ritual matters, and the incorporation of broad provisions regarding compliance with Shari'a as an over-reaching obligation into constitutions, large bodies of law, administrative standards and codes of conduct seeking to incorporate Shari'a into banking and financial management conducted by and for private institutions have developed in the last twenty-five to thirty years (Grassa and Gazdar, 2014; Abdel-Karim, 2013). The recent growth in Islamic finance has drawn attention to the alleged "uncertainty" of the Shari'a, and the challenges of adjudicating matters of Shari'a compliance in secular courts highlighted in 2004 by the Beximco case (Foster, 2015). The Beximco case was significant because for the first time, the questions of the validity, interpretation and scope of the English law vis-à-vis Islamic principles were considered by a secular court. The judge in the first instance held that English law was the governing law and there was no scope for the Shari'a law to apply as there could not be two separate law systems governing a transaction. Further, the judge argued that it would be highly impossible that an English secular court would apply religious principles in making the determination of a dispute. The appeal by Beximco against the decision of the first instance

judge was dismissed along the same arguments. The judge in the English Court of Appeal case further argued that the general reference of the Shari'a law in the agreement did not identify any specific Shari'a principles to be applied (*Shamil Bank of Bahrain v. Beximco Pharmaceuticals and Others*, Court of Appeal, Civil Division 28 January 2004 [2004] EWCA Civ 19). On the institutional level, various organisations are addressing these issues; there are also "organic" tendencies towards standardisation (Yasini, 2020). These phenomena are combining with others to form a new legal system, albeit one with particular characteristics, that could illuminate the challenges of incorporating Shari'a into governance mechanisms and laws for other 'technical' matters - and possible ways forward.

International legal cooperation on water management between and amongst Muslim-majority States in the Middle East and North Africa region in particular, and globally, has been limited, and mainly restricted to surface waters in as much as treaty laws and mutually binding declarations etc. are concerned. However, on a national and sub-national level within Muslim-majority States, governance of shared water resources, including groundwater resources, has operated successfully – and a number of bi-lateral agreements between Muslim-majority States have operated for many years. In some cases, the models developed for this management of water resources upon which multiple communities and actors depend was explicitly designed to refer to, and comply with, Islamic principles, in particular those related to *Shafa* and *Sirba* (Loodin & Wolf, 2021). In other cases, whilst Islamic law and principles were not a constituent part of the governing modalities adopted, their successes and acceptance by the Islamic communities they serve indicate that they merit examination when developing broader, transboundary theories of groundwater governance that are Shari'a compliant and centred in Islamic principles.

This chapter will first briefly examine examples of successful cooperative agreements between Muslim-majority states, negotiated and endorsed at State level, before moving on to examine local-level cooperation and management models, focusing in particular on models which utilise the conceptual framework of Integrated Water Resource Management (IWRM). Much can be learned from the application of IWRM in the MENA region that is of direct relevance for the development of Islamic theories of transboundary groundwater governance, drawing connections between governing principles of interconnectedness of water resources, the surrounding environment and the communities that depend upon it, and Islamic principles such

as *tawhid*, *khilâfa* and *amanah*, especially as they have been interpreted by Islamic scholars and environmentalists.

The choice of IWRM models as a possible source of examples and learning is influenced also by their ‘bottom-up’ nature, as this echoes the practitioner-led process by which the existing international legal code and practice around Islamic finance and banking structures has been developed. An examination of this process, and in particular of the ways in which those involved with developing codes of practice for Islamic financial management developed specific, technical rules from broad principles and *fiqh* in related areas, will be the focus of the second part of this chapter. Following this analysis of these differing areas, key learnings and analysis from the field of Islamic finance will be used in developing the proposed elements that could contribute to Islamic legal theories of transboundary aquifer governance to be elaborated in chapter 4.

### ***Legal Agreements for Bi-Lateral and Multilateral Cooperation on Water Management in the MENA Region***

No binding treaty governing cooperation and management of transboundary water resources – whether surface or groundwater - exists at regional level in the MENA area. A number of multi-lateral, and a much larger number of bi-lateral binding and non-binding cooperation agreements do exist however. The International Freshwater Treaties Database, maintained by Oregon State University, lists over eight hundred treaties and cooperation agreements established prior to 2007, of which only around seventy concern countries within the MENA region (Oregon State University, 2021). For the most part, these agreements are concerned with cooperation and management of a specific body of water – for example, Israel, Jordan and Palestine<sup>2</sup> have a range of agreements in place that shape their cooperation around shared water resources. Jordan and Israel signed bilateral agreements on water cooperation with Israel following the peace treaty of 1994, following the cooperation on water usage and management between Israel and Palestine that was established through various agreements initiated after the signing of the Oslo Accords in 1993. In 2013, the three countries – Israel, Jordan and Palestine - signed one of the

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<sup>2</sup> Whilst noting the official designation of ‘State of Palestine’ as recognised in the United Nations in 2013, I also note the frequent usage in the literature to the ‘Palestinian Territories’ ‘Israeli-Occupied Territories and Palestine’ and ‘Palestinian Territories and Gaza’. For simplicity and brevity, I use the term ‘Palestine’.

few multi-lateral cooperation agreements on water in the region, with further agreements on joint programmes on desalination in 2017. It is notable that the often difficult relations between Israel, Jordan and Palestine affected implementation of the agreements significantly, and effectively halted negotiations on expanded cooperation in 2020 (Mitchell/Atlantic Council, 2021).

Iran shares both surface and groundwater resources with a number of countries, and has entered into legal arrangements and treaties with States as diverse as Afghanistan, Azerbaijan, Iraq, Kurdistan, and – prior to its dissolution – the USSR. Many of these treaties were negotiated and agreed prior to the 1979 revolution and establishment of Iran as an Islamic Republic, which makes the lack of any reference to Islam or Shari’a in those agreements unremarkable, even if the majority were between Iran and other Muslim-majority countries. However, the constitution of Iran adopted in 1979 (amended in 1989) explicitly places Islam at the forefront of all legal and governmental authority, and in Article 4 states that “All civil, penal, financial, economic, administrative, cultural, military, political, and other laws and regulations must be based on Islamic criteria” and that “This principle applies absolutely and generally to all articles of the Constitution as well as to all other laws and regulations” (Constitution of the Islamic Republic of Iran 1979, amended 1989). Even with this clear directive in the constitution, the treaties and agreements negotiated with, for example, Turkmenistan in the 1990s and early 2000s contain only cursory references to Islam, and in every other respect mirror the language of similar bilateral agreements regarding water rights and usage concluded between states which are neither explicitly Islamic nor Muslim-majority.

Saudi Arabia is another country which has explicit directives related to the application and role of Islam in the development of legislation and policy contained in its Basic Law (1992) – the document which performs the function of a constitution. The very first Article of the Basic Law actually states that “God's Book and the Sunnah of His Prophet, God's prayers and peace be upon him, are its constitution” and in numerous other articles – especially 5 (allegiance to the king and royal family), 8 (equality), 45 (the Council and role of the *Ulema*), 55 (the king’s role in the implementation of Shari’a) and 67 (Regulatory Council) – explicitly cites Islam and Shari’a as the authoritative source for legislation, policy and the operation of State authorities (Basic Law, Saudi Arabia, 1992). As with the case of Iran, though, none of the treaty or cooperation agreements that Saudi Arabia has concluded with neighbouring countries regarding water management and usage contain explicit references to Islamic principles or

Shari'a. The Agreement between the Government of the Hashemite Kingdom of Jordan and the Government of the Kingdom of Saudi Arabia for the Management and Utilization of the Ground Waters in the Al-Sag/Al-Disi Layer (2015) notes the longstanding 'brotherly relations' between Jordan and Saudi Arabia, but does not refer to Islam at all. A model of concision – it contains just four articles – the agreement is nevertheless regarded as an important milestone for the cooperation over transboundary aquifer management in the region (Eckstein, 2017), but also globally, as few such agreements exist that cover transboundary groundwater as opposed to surface water resources. Scholars have projected that the agreement, and the provisions it contains regarding distance between extraction/pumping arrangements of each country and the establishment of buffer zones and protected areas, will avoid the possibility of a tragedy of the commons – whereby both or either party over-exploit a non-renewable water resource – until at least the year 2075 (Muller, Muller-Itten and Gorelick, 2017).

In North Africa, the Sahara and Sahel Observatory (OSS) hosts a tri-partite commission for the management of the North-Western Sahara Aquifer System (SASS) which governs cooperation between Libya, Morocco, and Tunisia on that specific water resource. Whilst this cooperation programme would appear to be functioning effectively, Morocco has been unable to establish effective cooperation mechanisms with Algeria on groundwater management, particularly concerning the Bounaim-Taffna hydrological basin at the north of their administrative borders, from which both countries are drawing water. Despite the importance of the water drawn from this basin for the economic and agricultural development of the region, to date, no cooperation has formally been established. Both countries are believed to be over-exploiting the basin, and a deterioration in water quality has been reported as well (Zarhloule et al, 2010). As with other treaties and agreements in the region, the text of the agreement and the founding documents of the OSS are purely technical, and do not refer to Islam.

### ***Islamic Influences in Present-Day Governance of Water Resources at National Level - Managing Citizen's Concerns Regarding the Purity of their Water under Islamic Law***

As the examples above note, references to Shari'a and Islamic principles do not exist in international and bi-lateral agreements on water-resources management between Muslim-majority States, even when those States have constitutions which expressly posit Islam and the Qur'an as the authoritative sources of law and the guiding standards for the development of legislation and policy. In domestic legislation and policy concerning water, though, references

to Shari'a and Islamic principles can be found. Additionally, clerical bodies in several countries have issued *fiqh* and *fatwa* regarding the management and use of water. These cover a variety of issues, many – if not most - of which may not initially seem to be directly relevant to transboundary groundwater management. However, in Shari'a as in nearly all bodies of law, specific principles are derived from analogical deduction – *Quiyas* in Shari'a, a sophisticated doctrine of reasoning that has evolved over centuries - and so it is important to identify these examples to illustrate the existing Islamically governed water-related practices that have been codified into law as potential sources of *fiqh* that could be applied to transboundary groundwater resources.

Several *fatwa* have been issued in Muslim-majority countries on issues around the purity of water that has been reused and purified in water treatment plants. These *fatwa* have arisen because of concerns by Muslims that such water does not meet standards of purity for the performing of ritual ablutions. These concerns are also related to the almost universally observed hesitation that people have about consuming and using water that has previously been used in toilet flushing etc. – the so called 'yuck factor' (Leong and Lebel, 2019). For observant Muslims, however, there are specific factors related to the purity of water used both to drink and to perform ritual ablutions that need to be addressed. These have given rise to an extensive discourse between Muslim scholars and clerics which have sought to classify water in terms of its level of purity, and, in recent years, to address the issue of water reuse and treatment. This dialogue has been pursued with the aim of clarifying whether water that has been reused and treated – and in particular, water that has previously been used in sewage systems – can be regarded by Muslims as pure enough to be used for either everyday purposes or ritual ablutions as prescribed by the Qur'an and *hadith* (Tayob, Deedat and Patel, 2015; Farooqi and Ansari, 1983).

Whilst there is some difference between different schools of Shari'a regarding the categorisation of water, with some clerics defining up to six distinct categories, and others only two much broader categories (Zahari et al, 2021; Farooqi and Ansari 1983), for the purposes of this research, water can, in the overall body of Islamic jurisprudence, be divided into three categories: 1) *tahur*; 2) *tahir*, and 3) *mutanajjis*. These categories are related to the division in Islamic law and tradition of two distinct sets of water usage by individuals and households. The first of these is concerned with the regular uses of water in everyday life: drinking, cooking, washing cooking utensils, plates and clothes, etc. Water used for agricultural purposes would



also fall into this category. The second use is for religious purposes, in particular for obtaining the state of ritual purity required for Muslims to pray. It consists of using water to cleanse things, places, or parts of the human body that have become defiled by impurity; or washing oneself by making ablutions (which consists of washing of certain defined parts of the body), or by taking a full bath in order to overcome a state of minor or major ritual impurity. These uses of water are referred to as '*adat* and '*ibadat* to indicate these two distinct purposes, respectively.

This categorization of the purposes for which water is used are directly related to the different categories of water itself in the Islamic religious tradition. The purest water is *tahur*. As the purest form of water, *tahur* is regarded as suitable for use in both '*adat* and '*ibadat*. If, however, water becomes mixed with, or in contact with, a foreign matter, or has been drunk from by a species of animal which is not haram (forbidden) in the Islamic tradition, the water is regarded as *tahir* – meaning that it can only be used for '*adat* purposes, and is not suitable for the performing of ritual ablutions. *Tahur* water which has been used in ablutions is regarded, following that process, as *tahir*, and can be used for '*adat* purposes. The third category, *mutanajjis*, refers to water that has become defiled as a result of pollution by matter related to faeces, urine or other bodily secretions, whether human or animal. This kind of water is deemed unsuitable for either '*adat* or '*ibadat* purposes.

Given this division of water, and the proscription against using certain types of water for ablutions in particular, it is unsurprising that Islamic communities have raised concerns about using recycled water – in particular, around whether water which was previously used for toilet flushing and sewage systems, but has since been treated, is regarded as *tahur*, *tahir* or *mutanajjis*. In the simplest terms, citizens have wanted to know whether the water that comes from the taps in their homes can safely be used for ablutions, or for everyday '*adat* purposes, if it is reused, treated water. As the Middle East, and especially the arid Gulf States, are increasingly reliant on water treatment and water reuse, given the overall scarcity of water in the region, the urgency of these questions has increased. In the Gulf Arab States, approximately 40% of wastewater from sewage systems that has been treated is reused, with the remainder being discharged into the sea (Qureshi, 2018). Usage, however, is mainly limited to non-food agriculture and landscaping services, with farmers reluctant to utilise treated water on food crops (Bahadir et al, 2016; Qureshi 2020).

The first effort to address these concerns came in Saudi Arabia in 1978, with the issuance of a *fatwa* from the Council of Leading Islamic Scholars (CLIS). The fatwa declared that treated and reused water could be used for both drinking and ablutions (CLIS 1978). In the United Arab Emirates, a similar *fatwa* was issued by the website of the Islamic Affairs and Waqaf Affairs Department of the United Arab Emirates. *Fatwa* number 1191 dated 18 June 2008 ruled that *mutanajjis* water is rendered pure through treatment and then being mixed with pure (*tahur*) water. Similar *Fatwa* permitting the use of treated water have been issued by clerics in Singapore, Malaysia and the USA (Zahari et al, 2021).

It is important to note that the *Fatwa* were issued by the clergy, whose role in the establishment of law and policy differs between Muslim-majority countries. In Malaysia, for example, the role of Islamic bodies in authorising water reuse is codified in domestic legislation, with water reuse requiring permission and approval by both state government and Islamic bodies (Osman, Kobayashi and Fujiki 2020). In Saudi Arabia, the relationship between the clergy and government is more complex (Kechichian, 1986) and the authority of any one *fatwa* is not universally shared amongst all residents and citizens, who, it has been observed, may choose to follow the guidance and instruction of other clerics based elsewhere (Freer, 2018). Even with these cautions noted, the willingness of religious and governmental authorities in Muslim-majority countries to address recent developments in water management from a *fiqh* perspective establishes an important precedent for similarly addressing water governance issues that move beyond issues of purity.

### ***Integrated Water Resources Management: Application in Muslim Majority Countries in the MENA Region***

IWRM is a framework designed to improve the management of water resources based on four key principles adopted at the 1992 Dublin Conference on Water and the Rio de Janeiro Summit on Sustainable Development. These principles hold that: (1) fresh water is a finite and vulnerable resource essential to sustain life, development, and the environment; (2) water development and management should be based on a participatory approach, involving users, planners, and policy makers at all levels; (3) women play a central part in the provision, management, and safeguarding of water; and (4) water has an economic value in all its competing uses and should be recognized as an economic good (Dublin Statement on Water and Sustainable Development, 1992).

Political investment in IWRM was fast in comparison with the diffusion and adoption of other conceptual frameworks developed by inter-governmental bodies (Allouche, 2016). The World Summit on Sustainable Development Outcome Document was signed by all participating parties and included a commitment to implement IWRM and water efficiency strategies by the end of 2005. By 2012, around four-fifths of all countries worldwide had partially or completely adapted the IWRM principles in their water laws and two-thirds had developed a national IWRM plan (Cherlet, 2012). The 2012 World Water Development Report reported that more than one hundred countries had implemented IWRM (WWAP, 2012), and the Report ‘Global Baseline for SDG 6, Indicator 6.5.1: Degree of IWRM Implementation’, issued by the United Nations Environment Programme (UNEP) in 2018 documents the implementation of one hundred and seventy two countries of IWRM principles into their water governance, although it does not contain a definitive figure of how many countries have integrated IWRM principles into law (UNEP, 2018), nor does the 2021 World Water Development Report (WWAP, 2021).

The UNEP report grades countries’ implementation of IWRM in several areas, including around the ‘enabling environment’ for IWRM founded in national law. In this area, there is a great deal of variance between MENA countries, with Iraq scoring ‘low’ in this regard, Iran and Kuwait scoring ‘high’, and the majority of MENA countries being rated as ‘medium low’ (UNEP, 2018). Interestingly, these scores – and, to the same extent, the overall rating each of these countries received with regards to IWRM implementation - did not correlate significantly with the country’s level of economic development as measured by the Human Development Index (HDI), and several MENA countries managed to achieve higher scores in other areas such as institutional cooperation and management even absent a robust legal framework (UNEP, 2018).

In 2019, UNEP followed up the 2018 Global report with specific regional analysis. The publication ‘Status Report on the Implementation of Integrated Water Resources Management in the Arab Region: Progress on SDG indicator 6.5.1’ examined 19 countries in the MENA region. Whilst noting that some countries were doing well in managing cooperation and institutional planning, of particular relevance to this research, the report states that

*“Many countries appear to be facing serious challenges in establishing an enabling environment for IWRM through policies, laws and plans. When comparing the seven*

*enabling environment elements for implementation, progress is lowest for the transboundary arrangements, paradoxical given the importance of transboundary water resources in the region” (UNEP, 2019).*

The seven enabling environments the report used as a frame for analysis were National Laws, Policies and Plans, Subnational policies, basin/aquifer management plans, transboundary management plans, and, for federal countries, provincial water plans.

Despite this limited progress on the level of laws and policies, much of the region did show progress in implementing IWRM. The report utilises an overall measurement score of zero to one hundred for evaluating IWRM implementation in a country, with zero being the lowest possible score and one hundred the highest, based on the degree of implementing of thirty-three separate elements, from very low to very high implementation. These elements cover the enabling environment of laws, policies and plans, institutional arrangements and stakeholder participation, management instruments for informed decision-making, and financing for sustainable water management. On this scale, the MENA regional average, at forty-eight points overall, was just one point behind the global average score of forty-nine points (UNEP, 2018, 2019). As noted previously, though, there are significant disparities between countries, even those within the same sub-regions. Countries that are Member States of the Gulf Cooperation Council (GCC) had the highest average IWRM implementation (sixty-one, ‘medium-high’ implementation), followed by the Maghreb countries (fifty-two, ‘medium-high’ implementation), the Mashreq (Forty, ‘medium-low’ implementation), and Southern Arab countries (twenty-nine, ‘low implementation’) a pattern which in itself masks disparities within those subregions (UNEP, 2019)<sup>3</sup>.

The fact that nineteen countries were actively reporting on their implementation of IWRM - regardless of their scores – demonstrates a widespread general acceptance of IWRM in the MENA region at the governmental level. The only two countries not reporting from the region were Djibouti and the Syrian Arab Republic; Djibouti responded with an incomplete submission and the Syrian Arab Republic did not respond at all (UNEP, 2019). Prior to the

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<sup>3</sup> The 19 reporting countries of the four subregions were, the GCC (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates), the Maghreb (Algeria, Libya, Mauritania, Morocco, Tunisia), the Mashreq (Egypt, Iraq, Jordan, Lebanon) and the Southern Arab countries (Comoros, Somalia, Sudan, Yemen).

outbreak of conflict, though, the Syrian Arab Republic had been developing IWRM planning, supported through the UNDP programme International Network for Capacity Building in Integrated Water Resources Management (Cap-Net), (UNSDG platform, 2021).

### ***IWRM, Islam and Transboundary Cooperation in the MENA Region***

There is little literature available on the compatibility of IWRM Principles and Islamic law and principles. This research aims to address this gap by identifying commonalities between the two and proposing how they could be used as the means of developing more explicitly Islamic theories of groundwater management. Some literature does exist documenting the success of IWRM programmes in individual countries, however.

At the governmental level, IWRM is in general accepted and adopted as a normative framework for the governance and management of water within countries in the MENA region, even if national legislation does not necessarily reflect this – as previously noted, this is not unique to the MENA region, as most national legislation on water governance does not explicitly mention IWRM. Equally important is community acceptance of water management models. One of the main principles of IWRM is that community level issues of supply and demand, and community management of local water resources, are central to a coherent strategy for water governance, and that ‘end users’ of water should have a voice and role in water management (Butterworth and Soussan, 2001; Day, 2009). The congruence between community level management of water resources, and the acceptance of communities for larger management models in which their local stewardship and use of water play a role is perhaps of particular importance in Islamic communities. The importance of the community-level focus is related to both the origins of Islamic precepts and principles regarding the use of water, which, as noted previously, were developed primarily concerning relatively small bodies of water, and to regulate fair usage within limited geographical spaces, usually related to agricultural boundaries (Naff, 2008; Feldman, 2017). These limited geographical parameters will by definition focus upon community level management and governance of water.

In Islam, however, there is also the explicit understanding of the much wider, if somewhat more abstract, global community of Muslims – the *ummah* - and of the obligations and mutual responsibilities of Muslims within that community. In examining the possibilities for Islamic theories of water governance and the management of transboundary ground water resources,

this research will suggest means by which the practices and norms which have developed within Islamic communities - derived from Shari'a - might be extended towards the *ummah* as a whole, with national governments embracing transboundary agreements over groundwater management as a form of mutually binding *khilâfa* operated in service of both their own citizens and the wider *ummah*. Aspirations to appeal to wider, shared values and a larger community of fellow humans - and, in the case of international environmental legislation, a community of humans and other species - over and above sovereign interests, are of course a central feature of much of the international legal framework (Gerber, 1984; Cassel, 2001). As such, when beginning to explore possible Islamic theories of water governance and the management of transboundary ground water resources, this research will examine what it is about both water, and about Shari'a and conceptual framings of the *ummah*, that could distinguish cooperation between MENA countries on this particular issue from other areas of international cooperation. This theme will be developed in greater detail in chapter 4.

To date, literature on the implementation of IWRM at community level has for the most part focused on analysing regional or country-level implementation, rather than through the lens of the religious and/or cultural identity of the population. However, through reading of the research that has taken this approach, it is possible to identify analysis of Muslim-majority countries and regions and note that findings which undoubtedly reflect the specific political and cultural conditions unique to a country will also reflect the religious and cultural identity – in this case, of Islam – held by the majority of citizens.

Atal Ahmadzai examined the implementation of IWRM in Afghanistan from 2009 to the present date (Ahmadzai, 2021). The research found that whilst IWRM had not been particularly successful at the institutional and political level – not least because of the extremely challenging political and security situation obtaining in Afghanistan - at the community level, IWRM had been well-received and in many cases had been a demonstrable positive factor in reducing intra-community as well as inter-community conflict over water resources (Ahmadzai, 2021). Ahmadzai attributes this success to the open, transparent decision-making processes and structures of the local management structures established by IWRM, the egalitarian and practical nature of which stand in contrast to the highly-politicised, hierarchical and opaque nature of the governmental and ministerial bodies established by the 2009 Water Law and IWRM programme. Whilst the evidence for this supplied by Ahmadzai is limited, the contrast might be considered in light of the differing forms of Islam and the interpretation of

*tawhid* proposed by Delkhasteh in his examination of post-revolutionary Iran, as discussed in chapter 2. Through this lens, it can be said that whilst the ‘freedom-based’ model of governance (whilst not explicitly Islamic in nature) operated at the local level of IWRM in Afghanistan has proved more efficient and successful than the ‘power-based’ approach of the central government.

In an examination of community-level implementation of IWRM in Sudan, and the Darfur region in particular, St. John Day found that community structures that were built upon existing models of community leadership and management were widely accepted (Day, 2009). The role of *Sheikhs* – local leaders – in governing water resources was central, emphasizing the prioritization of local political authority over technical expertise. Day grounds the authority of the *Sheikhs* in ‘hierarchical systems of governance’ based on seniority and habitual residence in the villages concerned (Day, 2009). However, other observers have noted that the authority of *Sheikhs* in Darfur is at least partly constituted as a form of religious authority (Tubiana et al, 2012), suggesting that Islam – and Islamic precepts concerning water – would inform the decision-making processes of the *Sheikhs* concerned. This might account for the fact, as reported by Day, that whilst the *Sheikhs* controlled decisions and negotiations over communal water resources, they respected the rights of private water owners to restrict access to wells on their property, and to use the water in those wells as they saw fit – even if this meant drawing excessively from groundwater resources that also served communal wells (Day, 2009). Whilst this approach can produce undesirable outcomes from a IWRM standpoint, it is entirely consistent with the understanding of some bodies of water as private goods within Shari’a as described in chapter 2.

The Organization for Economic Cooperation and Development (OECD), in a 2010 study examining progress in varied areas of public sector reforms, highlighted community cooperation around water governance reforms in Morocco (OECD, 2010). Reforms on water governance in Morocco have been quite extensive since the 1995 Water Code was introduced, a law which is heavily based on IWRM principles (Del Vecchio and Barone, 2018; Choukr-Allah, 2011). As part of the reforms, a new, community led model of management was established in rural locations, the *PAGER* (Programme d’Approvisionnement Groupé en Eau potable des populations Rurales) which draws heavily on local expertise and forms a bridge between these communities and national level coordination and management structures. The engagement of local communities, and their willingness to adopt sustainable IWRM

approaches to water management at the local level, is accredited by the OECD report for being one of the factors in the achievements of the Moroccan authorities in increasing access to potable water for rural Moroccan communities, and is also noted as contributing to greater coherence in local governance in general (OECD 2010).

***Comparative Example: The Development of Shari'a Governance of Islamic Finance and Financial Institutions***

Before attempting to identify the elements and precepts from Shari'a that might be used to formulate an Islamic theory for the governance of transboundary groundwater resources, it is useful to examine how the codification of broad Islamic principles and directives from the Shari'a into a specific set of laws and guidelines governing another area of governance and management was undertaken. The field of Shari'a governance in Islamic Finance is an especially relevant example for this purpose, for several reasons: Money, like water, takes multiple forms, can and does cross borders, be subject to multiple competing claims, and has a central role in the lives of individuals, communities and nations. It can function as a private, semi-private or public property. Additionally, financial regulations developed in one country or jurisdiction will inevitably need to find means of being compliant with international laws and regulations.

An additional factor makes the development of Shari'a governance in Islamic Finance an interesting – and informative – example for consideration in the context of water regulation and governance. The initial intellectual and political impetus for its development was very much practitioner led, in response to the desire of financial institutions Islamic customers to be able to manage and organise their finances through bodies operating in a manner that was compliant with Shari'a. Bankers, economists and academics, as well as clerics and scholars of Shari'a, led the way in developing regulations and models of Islamic finance. Codification into national law in many countries came considerably later.

This bottom-up model of the development of laws, regulations and administrative guidelines is reflective of the influence and role that practitioners and technical professionals have already held in developing existing law and policy on water governance, and on academic analysis of the move in water governance away from State-led models to more diffuse, locally relevant forms of governance (Hill, 2013; Woodhouse and Muller, 2017). Practitioners and academics,



as well as civil society organisations, had a substantial role in the development of both The Dublin Statement on Water and Sustainable Development (Dublin Principles) and the subsequent IWRM framework, and in the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (Woodhouse and Muller, 2017; Salman/World Bank, 2004). This involvement, however, was effectively at the invitation of Inter-Governmental agencies acting in partnership with United Nations Member States. The practitioner-led development of Islamic finance and banking laws and regulations was far more organic and, initially at least, conducted without the involvement or endorsement of national governments or inter-governmental institutions.

### ***Shari'a Governance of Islamic Finance and Financial Institutions: Origins and History***

Although the concept of Islamic finance and banking can be traced back about one thousand four hundred years (Zaman, 2008), its recent history can be dated to 1975, when the Dubai Islamic Bank, the first commercial Islamic bank in the world, started operations. Islamic banks rapidly followed in the other Gulf countries, and from there Islamic banks were rapidly established in all parts of the Muslim world over a relatively short period (Nagaoka, 2012). Islamic 'window banks' – separate Islamic banking systems housed within commercial banks - servicing Islamic communities in countries that were non-Muslim-majority - have also emerged since the 1990s.

Banking and financial management operates through both internal self-regulation, and through adherence to national law and administrative codes. Where banking involves international transactions, it also must comply with international law and regulations. The development of Islamic banking and financial regulation and law by States came (quite rapidly) *after* the development of codes of practice, internal regulations and governing mandates explicitly grounded in Shari'a and *fiqh* developed by Islamic commercial banking institutions. The internal codes developed by the Islamic commercial banks were themselves based in the work of both clerics and Islamic scholars and academics from the emerging field of Islamic economics (Alharbi, 2015; Tahir, 2007).

This process is worth examining for the purposes of this research as it illustrates clearly how practitioners and academics identified a set of both broad and specific Islamic legal principles,

codified and elaborated upon them, and put them into practice - and how this process led to a codification in national law – and regional and global institutional codes and practices. This process, which was iterative and involved an ongoing dialogue between States and communities of practice and financial institutions themselves, echoes the strong emphasis on broad participation identified as one of the key principles for the governance of water resources in the Dublin Principles - “Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels”. Theoretically, of course, most governments would claim that their development of policy and law is based on wide consultation with citizens, practitioners, and academic experts, but Islamic banking and Finance law remains a rare example of ‘bottom up’ policy development with an aim of incorporating compliance with Shari’a into a technical field that involves engagement with actors both local and international.

The primary impetus for the establishment of a system of Islamic banking, is, in simple terms, the prohibition of interest on loans and other financial instruments, derived from the Qur'anic prohibition against *riba*. Since the rise of Islam in the seventh century, it has prohibited any transactions including *riba*, which, as detailed below, is understood in Islamic jurisprudence to include any form of interest. Since the 19<sup>th</sup> century, and the colonial presence of Western powers in Muslim majority countries, however, Muslims have found themselves engaging with financial and banking institutions which include the use of interest. The establishment within Muslim-majority countries of Western banks by colonial powers such as the French and British, which in line with commercial practice in Europe charged interest, occurred throughout the territories occupied by the British and French empires. For example, in Egypt, the first commercial bank, a branch of a London bank, was established in Cairo in 1856 under the name Bank of Egypt. The National Bank of Egypt was established in 1898 by international - primarily British – partners, and continues to operate today. Both the Bank of Egypt (which closed in 1911) and the National Bank of Egypt used interest and operated based on essentially European banking practices (Nasser 1996; National Bank of Egypt 2021). The existence of these banks and their use by Muslims was seen as a grave problem by clerics and Muslim intellectuals (Nagaoka, 2012). There are other principles both broader and narrower which Islamic financing seeks to address in a Shari’a compliant manner, but the prohibition of *riba* remains the central *raison d'être* of Islamic banking.

Given the inherent tension between the Shari'a prohibition against *riba*, and the fact that traditional forms of banking practice and money management that had existed in the Islamic empire prior to the nineteenth century and colonization had all but disappeared in the face of Western style banks, in the mid to late twentieth century, Islamic scholars in newly independent Muslim countries began to develop differing schools of opinion about the future of banking in their countries. In the period immediately prior to independence, and in the first decades following, some thirty-one studies and papers were developed by Islamic scholars which began to map out the possibility for the future of banking in Islamic countries, and for interest free banking in line with Shari'a (Abdeen and Shook 1984; Shehata, 2006). Alharbi, drawing heavily on Nasser, summarizes the three schools of thought as follows:

1. All bank activities are *halal* (adhere to Shari'a).
2. Bank activities are *haram* (contradictory to Shari'a principles) but necessary. Some scholars argued that banks play an important role in the economy and therefore there is no harm in establishing banks based on the European Model, even though some of their activities are *haram*. This argument is based on one of the basic Islamic juristic rules for interpretation of Shari'a: *al-drurat tubeah al-mahdurat* (necessity knows no law).
3. Bank activities are necessary, but *riba* is not necessary for bank operations. Supporters of this opinion argued that Islamic jurisprudence has many forms of contracts that allow Muslims to avoid *riba* and can be implemented by banks. (Alharbi, 2015; Nasser, 1996).

Given the political and economic conditions at the time in the newly-independent countries, for many years, until the 1970s, the prevailing view of governments was the second – that the imperative of engaging with, and acting in, the world economy made participation in European-style banking permissible on the basis of necessity (Alharbi, 2015; Al-Ansari, Hasan and Metwaly, 1988).

It is worth noting even at this stage the apparent flexibility inherent in the second two positions, which recognise absolute prohibitions on the practice of *riba*, but seek to identify means by which a direct confrontation with the prohibition can be avoided either through appeals to necessity, based on an existing, established means of legal reasoning, or through adaptation of existing practices to remove the prohibited activity only whilst retaining the use and benefits of the wider structures and frameworks that surround it. Combined with definitional debates around *riba*, this flexibility has allowed for some variation within the Islamic banking system,

a flexibility that is illustrated by the differences between the systems and practices operated in the Middle East and Gulf States, and those of South-East Asia (Malik, Malik and Mustafa, 2011) Importantly for this research, it also demonstrates that differing interpretations of Shari'a can be brought together in a coherent, but nevertheless flexible, framework and set of regulations on technical matters.

In the 1960s and 1970s, academic studies on Islamic economics as well as Islamic banking flourished, and institutions and practitioners also began to explore the possibilities for establishing explicitly Islamic banking institutions. In part, this increased attention to Shari'a compliant banking models could be understood as part of a wider social and political revival of Islamic identity in Muslim-majority countries which began in the same time period (Haddad et al, 1991). As early as 1963, the first banks operating on an explicitly interest-free basis were established in Mit Ghamr, Egypt, and are attributed by many scholars with being the first modern Islamic banks – although their existence was relatively short lived, as they merged with government banks in 1967 (Al-Marwyne 1985; Wilson 1983).

Scholars attribute two international forums as especially important in driving the growth of Islamic banking. Representatives of governments participated in both, and Ministers of Finance from Muslim-majority countries engaged publicly with Islamic banking for the first time. Alharbi and Gafoor emphasize the 1970 Finance Ministers of the Islamic Countries conference held in Karachi, at which Egyptian delegates proposed that an international Islamic bank be established, and delegates from Pakistan proposed that an international union for Islamic banks be established (Alharbi, 2015; Gafoor, 2006) in triggering governmental action towards establishing and then regulating Islamic finance and banking institutions. Other researchers note the importance of the 1976 International Conference on Islamic Economics (Makka Conference) held in Saudi Arabia. The conference gathered 180 participants with different backgrounds, including governments, economists, Muslim jurists, bankers, and journalists from all over the world and is attributed by many researchers as being the point at which Islamic Economics was recognised as a discipline by both academia and governments (Nagaoka, 2012; Wilson 2004).

Since these events, Islamic banking has continued to grow. This growth has included legislative developments in countries which have attempted to explicitly regulated against interest-based banking (Iran, Pakistan, Sudan), and those which operate a dual system of regulation where

both Islamic and interest-based systems of banking operate in parallel (Malaysia, Indonesia, several of the Gulf States). However, overall, the system of Islamic banking has been led by commercial banks and private actors, with the World Bank and International Monetary Fund noting as early as 1999 that the private sector-led initiatives were often out-performing those of national Islamic banks in countries which had explicitly interest-free banking laws and systems (Iqbal & Mirakhar/World Bank & International Monetary Fund, 1999). It is now estimated that worldwide around US \$2 trillion of assets are managed under the rules of Islamic finance, with the banking sector estimated to control six percent of total global banking assets through a total of five hundred and twenty Islamic banks in seventy-two countries, with three hundred and one being full-fledged Islamic banks and the rest Islamic ‘window banks’ in conventional banking institutions (Anadolu Agency, 2020).

This research emphasizes here the importance of private-sector initiative and self-regulation in driving Shari’a based, Islamic regulations, working practices and codes of conduct in the development of Islamic finance because of the central role of private, and/or private-public, entities in managing water resources globally, and in the MENA region in particular. Whilst acknowledging the sovereign role of national governments in developing and negotiating transboundary agreements – representing as they do, agreements between States – any Islamic theory of transboundary groundwater resource management will by necessity heavily impact private and/or private-public actors and entities – but it could also, as in the example of Islamic banking, be initiated by those entities, in partnership with Islamic scholars. It is the aim of this research to provide suggestions of such a theory for development by as wide a range of actors as possible, and the success of the practitioner and scholar led development of Islamic banking is in this sense intended to illustrate how successful such non-state sponsored initiatives can be.

### ***Methods of Shari’a Governance in Islamic Banking and Financial Institutions***

Structures that have been established to moderate and regulate Islamic Financial Institutions exist at multiple levels. Most Islamic banks have their own supervisory board of advisors which advises the bank on compliance with Shari’a on both broad policy levels and with regard to specific transactions, upon the request of the bank (Alharbi, 2015). At present, the decisions and guidance issued by the advisory boards is subject to overview and supervision from a number of different regional and international organisations such as the Islamic International

Foundation for Economics and Finance – a body of the Muslim League – and the Islamic Financial Services Board. Disputes over differing interpretations of Shari’a with regards to specific transactions are referred to the International Islamic Centre for Reconciliation and Commercial Arbitration (IICRCA) which was established in 2005 (IICRCA, 2021). These bodies are themselves successors of several bodies established to attempt to coordinate and supervise Shari’a compliance amongst Islamic Financial organisations. Some of these bodies have ceased functioning, and some remain nominally active but less prominent (Shehata, 2006; Alharbi 2015).

The existence and functioning of these structures pose interesting challenges when considering Islamic Banking and Finance as providing examples of how one might consider the application of Shari’a to the governance of transboundary groundwater resources. The fact that there have been several attempts to establish authoritative bodies that would supervise and endorse or challenge the rulings of individual banks’ supervisory boards decisions and rulings, and that several bodies exist with overlapping mandates is a reminder that ultimately, the application of Shari’a is interpreted, and that the search for a ‘definitive’ application and understanding of some points in Shari’a will produce differing opinions. The Shari’a scholar and expert in the field of Islamic Banking and *Takaful* (Islamic insurance), Mufti Hassaan Kaleem, is clear that such disagreements are permissible and can be worked with:

“When issues of Islamic finance came under discussion by non-Shari’a scholars they consider the lack of standardization in Shari’a rulings as one of the hindrances in the progress of the industry. But to me it is a myth rather than a true reality. You will never find scholars considering it as a hindrance, because they know that difference of opinions based on correct arguments is very natural in those situations where there are no clear verdicts concerning them in Shari’a. It is also a fact that when there is a need for a collective view, scholars do agree on common features and come up with something that is uniform for practical use” (Mufti Hassan Kaleem/Deloitte, 2021).

Additionally, of course, the models of supervision and coordination that have emerged suggest practical challenges when considered as possible inspirations for the field of groundwater resources governance. Supervisory boards and Shari’a advisory panels utilised by individual banks are funded by those banks, and whilst the International Islamic Centre for Reconciliation and Commercial Arbitration is an independent, not-for-profit organisation, the majority of its

funding is from membership fees paid by around seventy commercial banks (IICRCA, 2021). An additional complication is also suggested by the fact that there are frequent reports of a shortage of qualified Islamic Scholars with specialised knowledge on finance and banking in relation to Shari'a, and that there is no internationally recognised qualification in Islamic finance (Deloitte/Kaleem, 2021).

This research, however, is not proposing that the structures and institutions established to support and supervise Islamic Finance and Banking act as a definitive model which should be wholesale duplicated for the establishment of Islamic theories and practices of transboundary groundwater resources governance. The use of Islamic banking as an example is intended merely to demonstrate that a combination of private and public actors have been able to drive – in a relatively short period of time – the application of Shari'a and Islamic legal principles in a technical area, working from a combination of both broad and specific Shari'a and Qur'anic rulings to develop an elaborate and detailed code of practice. Even noting the challenges that arise, and the particular advantages that Islamic financial institutions have had (with regards to access to financial resources to support their programme), the example is still informative and worth considering when examining how Islamic legal principles for transboundary groundwater governance might be managed.

Whilst the governance and management models employed by Islamic banks, as noted, would perhaps have limited utility as models for governance of Islamic legal methods of managing transboundary groundwater resources, the methods of legal reasoning applied by Shari'a advisors to those banks are of more direct utility, not least because they follow traditional, accepted forms of Shari'a analysis and reasoning applied to specific, technical questions. An overview of this process of reasoning and the traditions that have established it will be outlined in chapter 4.

## Chapter 4

### Towards Islamic Theories of Transboundary Aquifer Governance

#### *Introduction*

This research will now move on to explore possible elements of Shari'a compliant models of transboundary groundwater governance. Previous chapters have examined the broad history of Islamic guidance and precepts on water, the application of International Law regarding water in the Middle East and other Muslim-majority countries, examples of how water governance programmes and policies in Muslim-majority countries have worked, and how sophisticated Shari'a compliant legal codes on technical matters were developed in the field of Islamic finance. Using the insights from those chapters, the aim of this chapter is not to propose one single theory or model, but to identify potential areas for exploration by practitioners, scholars and policy-makers. Potential challenges and opportunities that might arise from practical application of these areas will also be addressed, given that one of the aims of this research is to investigate how the use of Islamic legal reasoning and Shari'a principles could play a catalytic role in expanding the theoretical principles and reasoning which practitioners and governments alike could draw upon when attempting to negotiate agreements regarding the use and governance of transboundary aquifers and other groundwater resources.

In order to clarify the methodology that will be applied to the issue of transboundary groundwater resources it is helpful to initially examine the established methods of Islamic legal reasoning applied by scholars and clerics. This area – of overall methods of Islamic legal reasoning - draws on extensive existing literature. In moving on to identify the core basic precepts and principles that will be used to explore the application of core precepts and principles to Islamic legal theories of transboundary groundwater resources governance, this research will be addressing a gap in the existing literature; as noted in chapters 2 and 3, whilst there has been often quite extensive examination of Islamic law and principles regarding water in general, and on the use of treated water for both ritual and household use, this has not, to date, been applied specifically to transboundary groundwater resources. In identifying potential interpretations and applications of both broad general principles such as *tawhid* and *khilāfa*, and more specific principles and *fiqh* applicable to water in general – within the context



of groundwater resources shared between Islamic States, this research aims to suggest new conceptual frames for consideration by scholars and practitioners.

Also addressing a gap in the existing literature, this analysis will then examine in detail how these identified principles and their interpretation in relation to transboundary groundwater resources align with international law in this area, and in areas where this alignment may not be straightforward, explore interpretations of both the Shari'a and international law that will allow for an accommodation that satisfies the minimum requirements of both bodies of law. From these, potential alignment between Islamic principles, *fiqh* and rulings, and international law and norms in this area will be identified. As previously noted, considerations for practical application will also be addressed in this research, contributing a new perspective to the academic literature and hopefully expanding the utility of the research to not just scholars and researchers but policy makers and practitioners.

### ***Methods of Islamic Legal Reasoning***

Islamic law, and the Islamic legal tradition, are, according to some legal scholars, (2018) the 'quintessential Jurist's law' in that it is in many respects deeply pluralistic and has developed - from a set of theologically agreed upon principles - by the reasoning and dialogue of a wide range of individual jurists working within different theological and legal schools of Islam (Sachs and Moustafa, 2018; Coulson, 1969). The authority of individual jurists or schools of jurists in developing rulings (*fiqh*) in a given territory is balanced with the value accorded to consensus (*Ijma*) as explored below. Whilst individual interpretations and rulings will of course differ, the methods of reasoning and analysis applied by Islamic Jurists are consistent across different schools of Shari'a and across both geography and time; the methodology described below has been utilised since the seventh century (Emon, 2012; Hallaq, 2013).

Analysis will proceed drawing on the four fundamental sources of Shari'a law: the Qur'an, the *hadith* and *sunnah*, *ijma* and *qiyas*. The first source, the Qur'an, is regarded as the original and eternal source of Shari'a law, containing the messages that Allah inspired the Prophet to relay for the guidance of mankind, including multiple specific injunctions. These messages are universal, eternal, and fundamental (Laldin, 2006).

The *hadith*, the second foundation, and ‘primary source’ of Shari’a is a body of tradition that captures a record of the normative practice (*Sunnah*) of the prophet, handed down from generation to generation and, from the seventh century recorded and encoded by Islamic scholars and jurists, which has become the agreed upon rules of faith and practice of Muslims. The *Sunnah* records as a model for other Muslims the behaviour, mode of action, sayings and declarations of the Prophet Mohammed under a variety of circumstances in life (Laldin, 2006).

The third source of Shari’ah law is the *ijma*. *Ijma* means a consensus of opinion of the mujtahids (the learned scholars of Islam), or an agreement of the Muslim jurists of a particular era or school - for example, one of the four main schools of Shari’a within the Sunni tradition - on a question of law (Faruqi, 1992).

*Qiyas* is the process of reasoning by analogy with regard to difficult and doubtful questions of doctrine or practice, for which a previous decision or *fiqh* cannot be identified. Through the act of comparing such cases with similar cases already settled by the authority of the Qur’an and Sunnah, jurists are able to arrive at a legal decision which can be said to draw upon existing cases which have themselves reasoned from the primary sources of the Qur’an and Sunnah. This mode of reasoning by analogy and comparison is familiar to almost all bodies of law, and especially to common law systems such as those employed in the United Kingdom, United States and Australia (Mohammad and Laluddin, 2019). There are sometimes considerable differences between the reasoning of one jurist and another on a specific question: this can exist within a particular school of Shari’a or between schools. Scholars such as Shahar (2008) have explored legal pluralism in the Shari’a courts, and Kamali (1998) has explored how jurists deal with situations of disagreement – *ikhtilāf* – through reliance upon *Ijma* in particular.

In investigating potential Islamic legal theories of transboundary groundwater management, this research will be relying upon all four sources of Shari’a. However, given that neither the Qur’an nor the Sunnah contain any direct references to transboundary groundwater resources, *Qiyas* and *Ijma* in particular will be applied, reasoning from both very broad, general statements regarding water and communal obligations between Muslims, through reference to potentially relevant *fiqh* in other areas. The application of Shari’a in such a manner to a matter such as management and governance of transboundary aquifers and groundwater resources – is possible because Shari’a deals not only with purely religious matters but also with all those subjects which comprise the content of secular, ‘regular’ Common law and Civil law systems

(Laldin, 2006; Rahman, 1984). In attempting to apply such a process of interpretation to the specific question of transboundary aquifer governance, this research is addressing a gap in the literature. This novelty, however, also implies a lack of established consensus in the area, and as such any interpretations of existing, related *fiqh*, or more general principles, will be an initial exploration, for development and elaboration -or correction – by Islamic scholars.

This method of applying *Quiyas* and analogy to existing *fiqh* is permissible within prescribed thematic areas. Shari'a classifies matters into three broad categories: *aqidah*, *akhlaq* and *fiqh* (Laldin, 2006; Khunibava and Rachagan, 2011). *Aqidah* concerns all forms of faith and belief in God. *Akhlaq* is most widely understood as concerning ethics and morals, in particular as they guide a Muslim's behaviour and attitudes (Haron, 1997). *Fiqh* is concerned with governing the relationship between humans and God, relations amongst humans, and between humans and other creatures, in their day-to-day life and in their management of communal affairs. It is with *fiqh* that Islamic finance, examined earlier, is governed – and there is sometimes disagreement with the relevance or propriety of *fiqh* used by governing bodies to justify certain policies or decisions, highlighting that within Shari'a as in other legal systems, legal pluralism is active (Abozaid, 2015). Scholars such as Brown (1997) have explored the historical origins of pluralism within Shari'a, and Shahar (2008) analyses questions of differing opinions between different schools of Shari'a and the potential for 'forum shopping' this gives rise to – an issue also addressed by Wiederhold (1996) and Shaham (2006). As noted in chapter 3, at least in application to Islamic Banking and Finance, there appears to be relative comfort with this kind of legal pluralism and a willingness to accept differences of opinion; whether such flexibility might extend to matters related to transboundary water governance is an open question.

*Fiqh* can be further divided into two areas called *ibadat* and *muamalat*. *Ibadat* is focused on the correct observance of ritual obligations and form with regards to a Muslim's worship of God. *Muamalat* is concerned with human relationships; political and economic/commercial activities, social arrangements and questions of governance would all, broadly speaking, fall within the sphere of *muamalat* (Haron, 1997). Injunctions relating to *aqidah*, *ibadat* and *akhlaq* are held to be fixed and unchangeable as they are concern matters which are not contingent upon surrounding circumstances, and as such are suitable to be adhered to by all Muslims, regardless of the time or context in which they live. However, injunctions of Shari'a – *fiqh* - which are concerned with the correct management of relationships between humans, and

between humans and other creatures, may change with circumstance, custom, time and place. Whilst *muamalat* rulings are derived from the sources of Shari'a, they were and are formulated from Shari'a sources through reason by qualified Muslim Jurists. This is the process of *ijtihad*, - exerting one's reasoning faculty to determine a point of law. (Abdal-Haqq, 2002). At the time of Islam's founding, the Qur'an was clarified and exemplified by the Prophet Mohammed. After the Prophet's death and the death of the Sahaba (Companions), and as Islam began to spread into new regions and cultures, the need to derive Islamic law from the Qur'an and other sources increased (Abdal-Haqq, 2002; McHugo, 2017). To meet this need, and to formalize the process of developing proper guidelines on how to derive law from Islamic sources, law schools – *madhab* - were created, and incrementally developed a comprehensive set of methodologies on the interpretation of Shari'a, which are now accepted across all schools of Shari'a in both the Sunni and Shi'a traditions. These processes and methodologies of applying and deducing laws from Shari'a – and the rulings they produced – are what is collectively known and labelled as *fiqh*. As previously noted, there are four main schools of law within Sunni Islam and two schools within Shi'a Islam; as Kamali (1998) notes drily, the existence of these multiple schools is evidence of a tacit institutional acceptance of *ikhtilāf* – diversity of opinion – from the earliest days of Islam.

One final aspect of Shari'a that is both significantly different to conventional civil and common law systems, and which will be of relevance when considering potential Islamic theories of transboundary groundwater governance is the role of ethical injunctions within the classification of acts in Shari'a. Unlike conventional civil or common law systems, in which an act is generally legal and permitted, or illegal and prohibited, or treated indifferently, in Shari'a an individual is not only guided as to what he or she is "entitled or bound to do in law, but also what he or she ought, in conscience, to do or refrain from doing" (Badr, 1978, pg. 189). According to Abdal-Haqq (1996) Within the conceptual framework that assigns intermediate values of permissibility and desirability to an act, five broad categories apply:

1. Obligatory, where performance of the act will merit a reward and omission will merit a punishment from God;
2. Recommended, where the performance of the act is rewarded but non-performance is not punished;
3. Permitted acts to which neither performance nor non-performance attract reward or punishment;

4. Discouraged acts where there is a reward for avoidance but no punishment for performance;
5. Forbidden acts, where there is a reward for avoidance and punishment for non-avoidance.

This dimension of Shari'a – the ethical guidance as to desired behaviours by Muslims – is especially tied to *akhlaq*. It will be an important element of the our discussion of theories of Islamic legal governance of transboundary groundwater resources this research proposes both because of the eternal and fixed nature of injunctions and imperatives related to *akhlaq*, and because of the parallels this research identifies between the ethical guidance and normative function of Shari'a and the normative, aspirational commitments and responsibilities of States as outlined in International Law and the treaty-based system. One of the aims of this research is to demonstrate that far from representing an alien set of values and rules, international law related to the management and governance of transboundary water resources – and the conceptual framework of the human right to water – are already aligned with Islamic legal and ethical principles, and can, through the application of *qiyas* and *ijtihad*, be traced back to the two primary sources of Shari'a, the Qur'an and the *hadith/sunnah*.

### ***'Usul for Islamic Governance of Transboundary Aquifers***

The first elements of potential theories of Islamic legal governance of groundwater resources are the broad, principles of *tawhid*, *khilâfa* and *amanah*. These, alongside the concept of the *ummah*, will be the '*Usul* from which the theories could be developed. It is profitable to start from these areas, rather than the specific Qur'anic injunctions of *shafa* and *shirb*, because of their centrality to much of Islamic legal and ethical reasoning. Firstly, grounding theories of Islamic legal governance of groundwater resources in these principles provides for the deepest, most widespread '*Usul* from which to reason towards more specific existent *fiqh* and rulings. Secondly, the reference to these broad principles is driven by the transboundary nature of the groundwater resources addressed; *fiqh* may be associated with individual schools of Shari'a, and as such find greater receptivity in territories associated with those schools, but '*Usul* are derived from the Qur'an and *hadith* which are common to all Muslims. As noted previously, the existing body of Qur'anic references to water, and *fiqh* and *sunnah* concerning water, do not specifically address issues related to water that is shared between two States.

In the governance of transboundary water resources, the State is by necessity the primary agent responsible for negotiating agreements with other States and actors, and for establishing legal and administrative regulations codifying governance within its won territory. This presents a challenge when seeking guidance from Shari'a as the State as it is presently conceived did not exist in the period from the Prophet's death through to the tenth century CE – the period in which is widely accepted that the majority of the foundations of Islamic Law were established and codified (Masud, Messick and Powers, 1996; Khunibava and Rachagan, 2011). As a consequence, it is not surprising that any discussions of water in the Qur'an, *sunnah* and subsequent *fiqh* were confined to much smaller geographic areas and indeed often referred to arrangements between individuals, rather than political entities such as the nation state. In his examination of Islamic law and international law, in particular in relation to international relations and humanitarian interventions in conflict situations, Sheikh Wahbeh al-Zuhili (2005) argues that Shari'a contained elements even in its earliest stages that indicate a recognition of the existence of forms of political relationships and governance structures that are analogous to the modern State, and addressed issues pertaining to the obligations Muslims had when such structures engaged with one another.

This absence of *sunnah* and *fiqh* referring specifically to water sharing between States – and indeed, the relative absence of *sunnah* and *fiqh* relating to arrangements between States over the use and governance of any public good and/or common resource, is one of the challenges that this research aims to address starting from very broad principles. As previously noted, this research aims not to propose a singular, definitive theory, but to identify the foundational elements from which such a theory could be developed by Islamic jurists and scholars, as well as practitioners. In doing so, this research will also relate the notion of the *ummah* to the practical application of *tawhid*, *khilāfa* and *amanah*, as a means of demonstrating how these concepts can be interpreted to support cooperation and coordination between Muslim-majority States over groundwater governance as being not just compliant with international legal obligations but with Qur'anic guidance and Shari'a.

## *Foundational principles for Islamic Theories of Transboundary Aquifer Governance*

*Tawhid*, as examined earlier in this research, articulates both the monotheistic nature of Islam, and the belief that there is one true God and one true faith – Islam (Kounsar, 2016; Philips, 1990). In the narrowest interpretations of this principle, there is little to relate to the issue of transboundary governance of groundwater resources such as aquifers. However, the work undertaken by Islamic scholars and environmentalists in recent years to elaborate an understanding and theory of *tawhid* that show it be revealing the interconnectedness of man and nature – for example Kamali (2010) and Nasr (1997) - offer illustrations of how *tawhid*, as an overarching principle of Islam, can be interpreted in a way that could be highly relevant to Islamic Governance of Transboundary Aquifers.

Amina Wadud, through her work *Inside the Gender Jihad* (2006), introduced a radical new methodology of interrogating and interpreting the Qur'an to examine verses which seemed to privilege the rights and experiences of one sex over another. The framing questions and principles she used to examine these verses - examining the context in which the Qur'an was written, the grammatical composition of the text, and the whole-world view the text embodies (Wadud, 2006; Riyani 2017) - could arguably be applied to readings of the Qur'anic verses which reference water, but also those which reference other natural resources, using not sex-inequality but contemporary analytical perspectives on water that are grounded in theories of environmental justice (Mehta, 2013) rights to water ( Miroso and Harris, 2011) and ecosystem scale management of water as the lenses through which the examination takes place. Such an approach is perhaps especially pertinent applied to water, given the unique properties of water, and the special place it holds within all human (and non-human) life on earth, and the universality of this importance. Other than air, no element or matter on earth demonstrates better the principle of *ahad*, that is, “ the oneness of God the Creator and the unity of all creation of which the human race is very much a part” (Khalid, 2010, pg. 710) implicit in *tawhid*.

Utilising an environmental lens to examine Qur'anic verses, scholars such as Lubis (1998), Khalid (2010) and Gada (2014) develop the argument that God and his creations are as one, and that the respect due to God also applies to those creations. To date, the environmental frame through which an analysis of Qur'anic verses has analysed *tawhid* has been focused on broad ecological and environmental concerns. Islamic scholars such as Lubis (1998) and Khalid (2010) have used the above verses and others, examined through an environmental perspective,

to argue that *tawhid* guides man to understand that creation was designed to function as a whole, and that each of its elements and parts, including human beings, plays its own self-preserving role and in so doing supports the rest (Lubis, 1998). Manzoor (1984) and Nasr (1998) develop this understanding further, arguing that it creates an imperative for Muslim-majority countries to engage in ambitious programmes of legislative and political reform to prioritise environmental concerns, a point that will be explored further below. Whilst acknowledging that the literature that exists on *tawhid* and environmental concerns does not focus on water, this research argues that not only is water, obviously, a central part of the environment and ecology, but that further, water is in itself particularly well suited as a medium through which to explore application of this thinking. Following an examination of *khilâfa* and *amanah*, this argument of the particular nature of water will be further developed.

### ***Khilâfa***

As noted in Chapter 2, Some Islamic scholars such as Kamali (2010) and Nasr (1997) have interpreted *khilâfa* as binding man to a form of contractual obligation towards God for his management of the natural environment. Muyibi et al (2010) develops this thinking to argue that *khilâfa* requires man to avoid over-exploitation, misuse, abuse, destruction and pollution of the environment and natural resources, and that this protection is actually a religious obligation upon every Muslim as important as moral and religious obligations of altruism, generosity, mutual understanding and cooperation. In this understanding, man is bound to use natural resources proportionately and wisely, and has a responsibility to ensure the protection of others' vested interest(s) with regards to nature and natural resources.

Lubis (1998) notes that the term *khilâfa* (in other singular or plural form) is used nine times in the Qur'an – and that seven of these times, it is used in conjunction with the prefixed *fi al-ardh* which is translated as 'on earth' or 'on this planet'. In each case it refers to a person, people, or mankind in general, to whom God has entrusted part of His power on earth. This principle, as discussed by Muslim environmental scholars, portrays men and women as trustees or stewards, who are provided with bounties that should be enjoyed within limits (Mohammed, 2012). In chapter 2, the work of a number of Islamic environmentalists and scholars was analysed, noting that some, such as Maidin (2010) focus on man's stewardship as a responsibility to protect and preserve the earth and its natural resources not just for the



generation presently living, but for future generations. Other scholars, in particular Nasr (1997) have gone further, interpreting *khilâfa* as a positive obligation to proactively protect the environment and adopt policy and legislation accordingly.

None of the environmental analysis by Muslim scholars that seeks to interpret *khilâfa* as a form of obligation towards environmental protection has focused specifically on water or the management of water resources. Given the arid and semi-arid conditions that obtain across most of the MENA region, and the various predictions of how seriously affected by climate change water supplies in many MENA countries will be within a short period of time (Zyadin, 2013), this gap is surprising. The Finnish Institute of Foreign Affairs did commission a chapter on this subject as part of a 2010 report, but this chapter mixes consideration of *khilâfa* and water with broader environmental conservation and management also (Wickström/FIIA, 2010). Given this gap in the literature, it is necessary to work from the broader, environmentally focused analysis and apply it – alongside other areas of scholarship and juridical thinking – to water – and, even more specifically, to shared groundwater resources to demonstrate how these broad academic theories might be used for real-world application concerning urgent, ongoing environmental concerns in the Middle East and North Africa.

### ***Amanah***

*Do you not see that Allah has subjected to your (use) all things in the heavens and on Earth and has made his bounties flow to you in exceeding measure, both seen and unseen (Qur'an 31:20)*

Closely bound to the concept of *khilâfa* is the concept and principle of *amanah* or trust. Allah offered *amanah* to the heavens, to the earth, to the mountains -to the rest of creation– but they all refused; only human beings took the risk of accepting it (Al Damkhi et al, 2008). As discussed in chapter 2, some scholars, such as Nasr (1997) argue that the concept of *khilâfa* is inseparably bound to the principle of *amanah*, and that together, these principles create an unnegotiable imperative for man to manage natural resources in a responsible, equitable manner. This thinking is developed further by Mohamed (2012) who extends the imperative to include legislative action by governments to protect and preserve the environment. This twinning of responsibility and trust is confirmed, according to Lubis (1998), by part of a *hadith*, reported by Abu Sa'îd Khudri, that the Prophet said: "The world is sweet and green (alluring)

and verily Allah has installed as of *khilâfa* in it in order to see how you act." In another *hadith*, writes Mohamed (2012), the Prophet stated: "Each of you is a shepherd and will be answerable for those under his care".

Although Gada (2014) and Ammar (2005) have both used examples of water to illustrate broader Islamic environmental discussions of *amanah*, as with *tawhid* and *khilâfa*, the interpretation of *amanah* as entailing environmental responsibilities has not been focused specifically on water, and so this research will, in suggesting elements of Islamic theories of transboundary groundwater governance be proposing a new, focused application of those interpretations that can be applied to transboundary groundwater resources. From the above discussion, and the analysis of each of the principles in chapter 2, it can be seen that it is the principles of unity, trusteeship and responsibility-*tawhid*, *khilâfa* and *amanah*- the three central concepts of Islam, that are also the central pillars of developing Islamic environmentalism. However, for Islamic environmentalism to address the transboundary nature of water, and thus the central role of states in its management, critical engagement with an additional principle of *'Usul* is necessary to elaborate two additional areas. Firstly, an additional *'Usul* that serves to address the transboundary aspect of such a theory, focusing on cooperation between States in the Muslim world. Secondly, it is necessary to identify what it is about water that makes it especially appropriate as a medium to which the broader environmental framing of these principles can be applied, and to begin to draw on specific *hadith* and *fiqh* concerning water that have been identified by Islamic scholars, many already discussed in chapters 2 and 3, that might serve as the *furu'* – branches – which Islamic Legal Theories of Transboundary Aquifer Governance might develop.

### ***Transboundary Cooperation: Tawhid, Khilâfa, Amanah and the Ummah***

*"Thus have we made you an ummah justly balanced, that you might be witnesses over the nations, and the Messenger a witness over yourselves"* Qur'an, 2:143

*Tawhid*, *khilâfa* and *amanah* have, to date, primarily been examined as principles pertaining to the relationship of generally, Man to God, and/or man to Islam, and more specifically, of Muslims to God and Islam. Even in the cases of environmentally-influenced analysis of these principles, discussion has been framed on general obligations pertaining to all Muslims, or the

obligations and responsibilities that might be found in the Muslim world-view (Rafiq and Ajmal, 1997; Kamali, 2010), but little focus has been placed on the role of States. The very nature of transboundary groundwater resources - that they are bodies of water that exist upon the territories of more than one State, and/or that their water is drawn upon for the use of citizens of more than one State - inevitably requires addressing Islamic legal and ethical guidance concerning International Relations, especially between Muslim majority countries.

An extensive body of literature on Islam, the *Ummah* and International Relations exists. For the purposes of this research, a necessarily brief overview and analysis of the main streams of thought in this literature will suffice to establish the potential relevance of the concept of the *ummah* to provide the ethical imperative – the ‘ought to’ of the Shari’a (Badr, 1978), as discussed earlier – to cohere application of theories of *tawhid*, *khilâfa* and *amanah* by Muslim-majority States in cooperation over transboundary groundwater resources. The concept of *ummah* has inspired, and been debated by, Muslim scholars and intellectuals from the very early days of Islam. The term *ummah* appears over sixty times in the Qur’an (Hassan, 2018), where it has multiple and diverse meanings ranging from followers of a prophet, or of a divine plan of salvation, to a religious group, a small group within a larger community of believers, misguided people and an order of being (Hassan, 2018). From its numerous and, sometimes, vague meanings in the early days of Islam, explored by Denny (1975) in his analysis of the etymology of the word *ummah* and its Qur’anic origins, it is now generally referred to and understood in terms similar to the dictionary definition offered by Oxford: “The whole community of Muslims bound together by ties of religion” (Oxford Dictionary/Lexico, 2021).

Akram (2007) notes that the concept of the *ummah* in the Qur'an can be seen to follow a chronological development from its use as a general word for *ummah* referring to communities of religious belief – including Jewish, Christian and the Muslim *ummah*, to a usage which denotes almost exclusively the small community of Muslims, especially in the *Madinan* period of the Prophet's life, as the *ummah*. Denny (1975,) has also argued that the chronological unfolding of the Qur'an led from a general concept of *ummah* to a more focused reference to the emerging Muslim community:

*“...we have here a matter of umma not essentially changing its meaning as religious community throughout the chronological development of the Kur'an so much as having its meaning*

*progressively augmented as the prophetic message reaches its fullest development*". (Denny, 1975, pp.862).

Among the many responsibilities which the Qur'an explicitly demands of Muslims with regard to the *ummah* is to retain its unity and avoid internal dissension or division. Denny (1975) has analysed the multiple verses of the Qur'an which reiterate this message, noting that "Muhammad seems to have struggled spiritually and intellectually with the fact of religious disunity among peoples" (Denny, 1975, pg. 50). This Qur'anic injunction to unity was most obviously not obeyed almost immediately after the death of the Prophet Muhammad in A.D. 632; the dispute amongst Islam's followers about the Prophet's legitimate successor lead ultimately to the creation of two distinct traditions in Islam, with Shi'a and Sunni remaining to this day distinctly separate communities with their own legal and theological traditions (McHugo, 2017). Nevertheless, both traditions have continued to invest the concept of the *ummah* with moral authority, and Hashmi (1993, pg. 53) goes so far as to state that "... there persists to this day a strong tradition among Muslim theorists to invest moral standing not in the fifty-odd Muslim-majority states, but in the collective Muslim community, the *ummah* referred to by the Qur'an". Other Muslim scholars, such as Akram (2007) and Sheikh (2013) similarly argue for the moral authority of the *Ummah*, whilst acknowledging the primacy of the State in governance in the existing order.

Several scholars have emphasised the fact that *ummah*, since the original Qur'anic use of the term, has referred to a collection of people, and not of a territory, or, in modern terms, a State. Zubaida (1989) argues that the Caliphate and ottoman Empire of the period preceding World War One was a 'State-like' structure, but deliberately refrains from identifying it as a representing a State, precisely because of this political and moral framing of rule over people and not territory. This concept of the *ummah* was seriously challenged by the growing impact of western political culture from the beginning of colonialism, and by the end of the nineteenth century, most of the Muslim lands had come under the colonial rule of the European powers. The Ottoman empire, and Iran retained nominal independence, but remained constantly under either direct or indirect foreign pressure. In the twentieth century, as countries in the middle east gained independence, with some fifty or so countries Muslim-majority, the relationship between the *ummah* and these Nation States presented something of a contradiction. The Nation State, as understood in international law, is bound by territory and can only represent, or claim to represent, the interests of its own citizens.

As modern Muslim-majority nations have established themselves, Ahmed (2007) and Hassan (2018) have pointed out that they have not been immune to nationalism, and even to conflict. In some cases, ruling authorities can and do see appeals to the authority of the *ummah* as subversive attempts to undermine their own power (Hassan, 2018; Sheikh, 2013), and many western scholars of International Relations such as Pipes (1983) similarly regard the concept of the *ummah* with suspicion (Akram, 2007). Certainly, for the purposes of this research, the fact remains that international and regional agreements between states on matters such as the management and governance of transboundary groundwater resources are concluded between, and on behalf of, States. Those States may be well inclined to recognize the *ummah* as “a spiritual, non-territorial community distinguished by the shared beliefs of its members” (Hassan, 2018) whilst focusing their own negotiations and actions on territorial interests.

This research still contends that *ummah* has an important place in the development of Islamic legal theories of transboundary groundwater governance. Regardless of the political realities that may obtain in any one Muslim-majority country, including how much authority the national government is willing to accord the *ummah*, such theories will draw on Qur’anic and Shari’a guidance, including that on the *ummah*. At this point it is worth recalling the ‘ought-to’ aspect of *akhlaq* and *muamalat* aspects of Shari’a explored earlier in this chapter.

### ***Tawhid, Khilâfa, Amanah and the Ummah as 'Usul***

From the above analysis, and recognising the work of Islamic environmentalists and scholars such as, who have already undertaken extensive research in identifying the role the core Qur’anic concepts of *tawhid*, *khilâfa*, *amanah* and the *ummah* can play in environmental concerns, these concepts constitute the four major ‘*usul* from which Islamic theories of transboundary aquifer governance could be constructed. Together, contemporary Islamic scholars of environment, politics etc. argue that they outline an imperative on humankind to regard the earth and its resources as a part of a unified whole which cannot be separated from God or Islam itself. They endow man with a grave responsibility to use and manage those natural resources responsibly and justly, not just for the benefit of man now, but for all species, and for future inhabitants of the earth. The *ummah* guides Islamic States and Muslim-majority states to act on behalf of - or at least take into serious consideration - all Muslims globally, irrespective of borders and nations.

As will be examined later, these imperatives are not difficult to align with the goals and imperatives of international legal instruments on water governance. Before examining that confluence, though, it is useful to add the *furu'*– branches – to these roots. It is these *furu'* which add specificity related to water to the environmentally inspired *'usul* discussed above. As the *furu'* are more explicitly concerned with water, and its uses and questions regarding ownership of water, an examination of the particular nature of water as both a resource and a broader natural phenomena can add nuance to the overall framing of the theories of groundwater governance these roots and branches will give shape to.

### ***Water as both a resource and a sociological agent shaping human relationships***

*Water knows no boundary. Though we may draw it on a map, say this is where the water starts and where it ends, it is not true. Water knows the way into the Great Mystery. It is not afraid of going underground. Water is not afraid of dams or dry creeks, bridges or brick walls. It is patient. Water understands time. It will find a way (Qualls, 2019).*

For thousands of years, managing water has been fundamental to the development of human societies in the Middle East and North Africa. In the cradle of civilization, the legal codes governing the cities of ancient Mesopotamia as recorded in the Code of Ur-Nammu around 2100 BC and the Code of Hammurabi around 1750 BC prescribed obligations for the proper use and maintenance of common water works (Finkelstein, 1969; King, 2008). In classical literature, Herodotus described Egypt as the gift of the Nile's floods and flows (Herodotus, translated Greene 1987). In the 14th century, the great Tunis-born statesman and scholar Ibn Khaldun first sought to decipher a pattern in the cycles of human political and social organization. He argued that dynasties endured by establishing cities, ensuring urban life as the highest form of civilization, and went on to name the provision of fresh water as one of the few critical requirements for siting cities, blaming the failure to adequately secure this natural necessity for the ruin of many Arab towns (Khaldun, 1967).

The importance of water as a resource in the Middle East and North Africa, and the urgency facing policy-makers in the region as a result of water scarcity and increasing climate-change

related pressures, was discussed in chapter 3. The importance of cooperation over transboundary groundwater resources *as resources* has been well documented (Michel et al/Brookings Institute, 2012) but for the purposes of this research, and of relating the governance of transboundary aquifers and groundwater resources to Islamic principles of *tawhid*, *khilâfa*, *amanah* and the *ummah*, it is informative to examine the sociological properties of water, and its role as “a generative and agentive co-constituent of relationships and meanings in society” (Krause & Strang, 2016, pg. 633). This sociological function of water, speaks directly to the principles identified as potential *'usul* for the development of Islamic theories of transboundary governance of groundwater resources.

There is a large volume of literature examining the political dimensions of water and water resources management between States. Hydropolitics as a term to analyse the political dimensions of water between sovereign States has been used in the literature on international water conflicts, notably those in the Middle East for at least half a century (Waterbury 1979; Ohlsson 1995). Elhance (1999) defines hydropolitics as the systematic study of conflict and cooperation between states over water resources that cross international borders. The concept refers primarily to conflicts and negotiation processes between sovereign states on water allocation and distribution, particularly in relation to transboundary rivers or aquifers. Although some scholars, such as Turton and Henwood (2002) have proposed to broaden the term to encompass all water politics, the focus on conflict and cooperation over transboundary resources remains the accepted usage (Mollinga, 2008).

Whilst the study of hydropolitics, and in particular of political settlements and conflict over contested water resources continues, a notable recent development has been an increasing focus on exploring the social nature of water itself, moving from regarding water as the object of social processes, to viewing water as property that is both shaped by, and shapes, social relations, structures and subjectivities. Linton and Budds (2014) have argued that the dominant model of the hydrologic cycle simplifies the more complex realities of water circulation (and non-circulation) and is in itself an ideological construct. Their analysis of the assumptions about the hydrologic cycle framework for understanding water that designates some forms of water—especially the “blue” and flowing kind—as being more desirable than, for instance, the “green” or “brown” water stored in plants or soil (Krause & Strang, 2016), describes a hierarchy of water that bears some echoes to the distinct categorization of water purity for the purposes of everyday use and ablutions described in chapter 3. Linton and Budds (2014)

propose the “hydrosocial cycle” as a conceptual alternative, foregrounding the ubiquitous involvement of conflicting human activities in water circulation. These alternative means of framing our understanding of water provide an additional context for moving towards developing Islamic theories of groundwater governance. Such analytical concepts can, for example, be applied to contemporary cases regarding the designation of water as being fit for ritual purposes. The *fatwa* and rulings issued by the Clerical authorities in Saudi Arabia, the UAE and other countries deeming recycled water as *tahur* – pure - could perhaps be read as adopting a similar approach, recognising that the properties and character of water can be shaped – and reshaped – by the actions of man, and visa-versa.

Other recent work that emphasises water’s role as an agent in social and cultural life includes Fontein (2008), Linton (2010), Chen, McLeod, and Neimanis, (2013), Strang 2014, and Carse, (2012). These scholars analyse the simultaneously social and material processes that compose the “infrastructure” of watershed management, with Carse going so far as to argue for an understanding of nature *as* infrastructure, “... delivering critical services for human communities and economies” (Carse, 2012, pg. 540). Observing that water is physically integral to political processes, rather than just their object, Bijker (2012) recommends studying human societies as ‘water cultures’ that are shaped by the requirements to manage water. Other scholars frame our environments as ‘water worlds’, purposively emphasising the importance of water, rather than simply landscapes (Hastrup 2009; Orlove and Caton 2010; Barnes and Alatout 2012).

Such an inclusive and socially focused understanding of water relates, to the unitary, monolithic dimensions of the Qur’anic principle of *tawhid*. The work undertaken by Islamic scholars and environmentalists in recent years to elaborate an understanding and theory of *tawhid* that shows it revealing the interconnectedness of man and nature – for example Kamali (2010) and Nasr (1997) – echoes the framing suggested by Bijker (2012), and can be read as recognising water not as simply a physical property over which man exercises control, and on which he imposes meaning, defined, as the *Wiley Interdisciplinary Reviews: Water* puts it when defining its key research interests, by “interpretations that we, as a society, have brought to water through art, religion, history and which in turn shapes how we come to understand it” (Wiley, 2021). Through a sociological framing, water is an agent of equal importance to man in shaping God’s creation, as integral to *tawhid* and the unity of God as man is. Similarly, the relationship between man and water is reframed as mutually defining, rather than that between



an object (water) over which the subject (man) exercises self-interested control. The implications of such a framing for the governance of transboundary water resources between Muslim-majority countries is potentially transformative.

Beyond sociological considerations of water and its relationship with man, water presents unique properties that render it especially challenging to manage through the tools of international law and diplomatic relations, even as those same properties exacerbate the need for cooperation between actors seeking to use it (Butterworth and Soussani, 2001; Day, 2009). The water contained within transboundary groundwater aquifers is free to move across borders whilst within the aquifer, and whilst agreements may be reached between states regarding drawdown limits, those agreements cannot anticipate fluctuations in natural leakage or recharge rates which may occur as a result of natural phenomena (UNESCO 2001). Groundwater in one aquifer may be located deep underground in some areas on one side of a national border, and in others lie relatively close to the surface, and even under the best use of monitoring and modelling techniques to identify groundwater characteristics, the definition of an aquifer cannot provide concrete conclusions about groundwater ownership (Golovina, 2018). In the context of transboundary aquifers, these problems can be exacerbated by asymmetrical levels of knowledge, opportunities and institutional frameworks between the countries sharing an aquifer (UNESCO, 2001).

In attempting to negotiate the complexities presented by shared groundwater resources, and especially aquifers, the authors of the UNESCO framework document on *Internationally Shared (Transboundary) Aquifer Resources Management* (2000, pp.22-23) noted that “There is some controversy as to whether the fundamental right to a reasonable and equitable utilisation and the fundamental obligations not to cause significant harm, to exchange on a regular basis available data and information, and to notify other States in advance of planned measures are equally applicable to deep, confined or ‘fossil’ shared groundwater resources which are cut off from any significant recharge and to groundwaters which, being interconnected to a surface water system, show appreciable recharge” (UNESCO 2001).

Water that exists in transboundary-aquifers is perhaps especially difficult for policy-makers to conceptualise, given that it is underground and ‘out of sight, out of mind’, as Eckstein (2021) notes, going on to claim that this invisibility renders Transboundary Aquifers the ‘neglected stepchildren of international water law’ (Eckstein, 2021). Given the responsibility of politicians

and civil servants to negotiate settlements and political agreements concerning the specific territorial body, with clear borders, that their State represents, this conceptual challenge is considerable. The difficulties of conceptualising factors such as flow, gravity, porosity, permeability, hydrostatic pressure, and other natural factors (Eckstein, 2021) in a transboundary aquifer are exacerbated in the semi-arid and arid regions such as the Middle East and North Africa where hydrogeological data are sparse and understanding of aquifer systems often remains poor (Davies et al, 2012). Access to robust hydrogeological data remains a challenge even in situations where water, and access to it, is a source of serious disagreement between actors, such as the shared mountain aquifer between Palestine and Israel (Dai, 2021).

Given these challenges – but also noting the potential opportunities that a conceptual reframing of water, especially in sociological terms, can provide, the identification of potential ‘*usul* and *furu*’ for Islamic theories of groundwater governance assist Muslim-majority countries to identify a common framework of shared values and commitments rooted in Islamic law from which to negotiate the complexities of transboundary aquifer governance.

### ***Potential furu’ for Islamic Legal theories of Transboundary Aquifer Governance***

As was noted in chapter 2, water in its natural state is generally considered in Shari’a to be a common property resource, with clear principles prioritising use for human consumption for drinking and performing ablutions prioritised over the provision of water for domestic animals and irrigation of crops (Zahari et al, 2021; Gade, 2019). The history of ‘common-property regimes’ – whereby communities and States initiate “institutional arrangements for the cooperative (shared, joint, collective) use, management, and sometimes ownership of natural resources” (McKean and Ostrom, 1995, pg. 1) has a long history, embracing both formal and informal arrangements. Groundwater, however, is a resource that is challenging to fit within this framework for the reasons noted above. Johnson and Nelson (2004) have also noted that common-property regimes can produce less favourable outcomes in terms of conservation of resources than other management arrangements. The Qur’an, and subsequent *fiqh* have treated water in general as a common property in much the same way one might treat more static, stable resources. This general principles of water as a common good to which all should have access is reaffirmed in multiple *fiqh*, as documented by Khalid Saifullah Rahmani in his comprehensive documentation of rulings (*ahkam*) issued regarding water - *Water Resources*

(2016). As Rahmani documents, there is a broad consensus across all the schools of Shari'a that water from rivers, wells, springs, lakes and ponds may be accessed by man to fulfil his needs, and that no one individual can claim ownership to these resources. Specific rulings to this effect that Rahmani documents include those of Abu Dawood 3477, Radd Al Muhtar 5/311, Fatwa Al Hindiya 5/390, Kanz Al Dhaqiq 1325 and Al Fiqu Al Islami Wa-adilltuhu 6/4665.

Further rulings and writings by Islamic jurists recognise however that such freedom of access must be exercised responsibly, and is not without limits. Ruhul Amin, in Dur-ma Al Shari 10/12 and Muhammed Huzaifa Dahoodi in Hidayah 4/468 both note that users taking water from such sources must refrain from taking water for irrigation purposes if doing so would deprive others of adequate water for household needs, and Rehmatullah Navdi is quoted as stating that if water is owned collectively, then its use must be done by judicially and justly distributing it (Rahmnaï, 2016).

These rulings, it could be argued, grow directly from the broader *'usul of tawhid* and the *ummah*, which guide man to consider the interconnectedness of the earth and its resources, and to bear in mind their responsibility to act in the interests of the global Muslim community. In emphasising the importance of a just and considered distribution of collectively sourced and owned water (Rahmani 2016), Rehmatullah Navdi recalls the social responsibility implied by both the *ummah* and the principle of *khilâfa*, and in particular the importance of responsible guardianship of the earth's resources with regards to fellow Muslims.

Islam in general does permit and recognise forms of ownership of water. Specific rulings on this matter which add to the potential *furu'* of Islamic legal theories of transboundary aquifer governance are numerous. Broadly, these *fiqh* echo the understanding of water as being, in its natural state – that is, when it is held in rivers, springs, lakes and the oceans – a common resource, with ownership permissible only when an individual has taken such water and placed it in containers which he or she then sells on or trades. The specific *fiqh* cited in support of this position include AL Mausua't Al Fiqhya 23/376, Sharh Al Majalla 10/276, Al Fiqh Al Islami Wa-adilltuhu 5/604, Takmilat Fata Al Mulhim 1/521 and A'la Al Aunan 14/157.

Rahmani goes on to note that some differences exist between different schools of Shari'a within the Sunni tradition, with the Hanafi's and Maliki's regarding water in reservoirs, lakes and

springs as ‘commodifiable’, if not directly subject to ownership, whilst the Shafi’s and Hanabis err towards judging these sources of water as neither subject to ownership nor the water from them commodifiable (Rahmani, 2016, citing I’la Al Sunan 14/158, Takmilat Fata Al Mulhim 1/523, Sharh Al Majalla 15/236, 239, 242, and Al Muasuat Al Fiqhiyya 25/374).

One final set of *fiqh* that are relevant to this research would be those which address the role of government in regulating boring into groundwater on private land. In general, the consensus is that the government – or the sovereign, as it is often stated – may prohibit an individual from boring into groundwater on his own land if in doing so he would affect the water table and risk ‘public harm’. The *fiqh* Rahmani (2016) documents in support of this consensus include Al Mausua Al Fiqhya 39/43, Al Fiqh Al Islami Wa-adilltuhu 4/451, Durar Al Ahkam Sharh Al Majalla Al Ahkam 1/36, Fatwa Muasira 1/594 and Hidayah M’a Hashiya 481.

These *fiqh* form natural *furu’* arising from the general principles around water and its use and relationship to man established in the ‘*usul* of *tawhid*, *khilâfa*, *amanah* and the *ummah*, reinforcing the emphasis on water as a resource that should be accessible to all and for which man has a responsibility to exercise responsible, fair stewardship. Two areas which would need further elaboration, however, for the development of an Islamic legal theory of transboundary aquifer governance would be around the management of water between States (as opposed to between the State and the citizen) and to address aquifers specifically.

As Sheikh (2013) has pointed out, the Qur’an, and much subsequent Shari’a has been focused primarily on the conduct of individuals, and whilst they provide often very detailed guidance in matters of personal conduct, neither the Qur’an nor the *hadith* contain explicit guidance on the State, and especially not on international relations. In classical Islamic thought the world is simply demarcated into *dar-al-Islam* and *dar-al-harb*, the domains of peace (or Islam) and the domain of war, though a later addition by the Ottoman Empire saw the creation of *dar-al-ahd*, the domain of treaty (Khadduri, 1955). The Qur’an does not offer guidance on the management of relations between these domains. Khadduri (1955 pg. 46) even goes so far as to suggest that “there is no Muslim law of nations in the sense of the distinction between modern municipal (national) law and international law based on different sources and maintained by different sanctions”.

Although there is an extensive literature examining Islamic theories of International Relations grounded in Shari'a and/or the Qur'an, there is not a consensus on Shari'a compliant methods of International Relations. As such, it would be necessary for some form of *qiyas* to be applied to the *fiqh*, and '*Usul and furu*' identified in this research for them to be applied to any theory governing transboundary aquifers managed between Muslim-majority (and self-defined Islamic) States. Similarly, none of the Qur'anic guidance or *fiqh* on water resources explored in this research refer explicitly to aquifers. Some of the guidance and *fiqh* refer to springs and water that is below the surface and needs boring to access; again, *qiyas* would need to be applied to explain the applicability of these rulings to aquifers.

### ***Relating the 'Usul and Furu' of Potential Islamic Legal Theories of Transboundary Aquifers to International Law***

This research has already touched upon the general alignment of the Islamic legal principles regarding water and water usage and the provisions of the Sustainable Development Goals relating to water, and of the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses (hereafter the Watercourses Convention). As noted, regardless of these alignments, language linking provisions regarding water usage and Islamic teachings on water does not appear in any of the bilateral or regional agreements pertaining to transboundary water resources management in the MENA region. This situation obtains despite the fact that countries including Iran, Saud Arabia and Egypt have specific provisions within their constitutions that require all legislation passed to adhere to Shari'a. In the case of Iran, through the governing principle of *Velayat-e faqih*, the doctrine introduced by Ayatollah Khomeini, even the elected government and president is, according to the constitution, subordinate to the guidance and rule of the *ulema* – the senior clergy. The *ulema*, led by the Supreme Leader –are in turn tasked with ensuring that law is adherent to Shari'a in all matters, no matter how complex, or how mundane (Axworthy, 2013). Despite these provisions, the text of the agreement between Iran and Turkmenistan, another Muslim-majority country, for example, Islam and Shari'a are not mentioned.

Although the link to the rich heritage of Islamic legal rulings and thought around shared water resources has not, to date, been utilised by the governments and representatives of Muslim-majority countries to contextualise and support the agreements they have drawn with one another to manage shared water resources, this research demonstrates that it could be so used,

and that there is, in fact, a great deal of synchronicity between these teachings, the framing of water as a human right, and the provisions of the Sustainable Development Goals and the Watercourses Convention.

Goal Six of the Sustainable Development Goals - “*Ensure availability and sustainable management of water and sanitation for all*”, and the first specific target of that goal, 6.1, “*By 2030, achieve universal and equitable access to safe and affordable drinking water for all*” (Agenda for Sustainable Development, United Nations, 2015) both resonate strongly with the overall tendency within Islam and Shari’a to view water as a common resource to which all should have access. In later targets, such as 6.4 - “*By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity*” and 6.5 – “*By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate*” (Agenda for Sustainable Development, United Nations, 2015) the focus is widened from specifically ‘drinking water’ to water used for a wider variety of purposes, reflecting a commitment to the principles of IWRM, which guide States and users to manage water holistically, at a scale that reflects the ecological context of the water, and accommodate all users and uses. These two definitions could be interpreted as echoing the separation noted in the Qur’an between *shafa*, the right of thirst, which establishes the right of human beings to quench their thirst, and also the thirst of their animals; and the *shirb* which is the right to irrigate lands (Faruqui, 2001, De Chatel, 2002).

The concepts of *shafa* and *shirb* establish in Islam the overarching principle that individuals have a right to access water, but when considering Islamic principles and legal guidance on water usage, these rights are always balanced with obligations related to three main Shari’a principles: *khilâfa* - man’s role as a steward of natural resources, *tawhid* - which directs man to always observe the principle of unity, including, it is increasingly argued by Islamic environmentalists such as Nasr (1997) and Kamali (2010), between man and his environment, and *amanah* – the principle of trust and responsibility. Similarly, the later targets of the Sustainable Development Goals elaborate provisions for protecting interconnected ecosystems related to water, and for cooperation across borders to ensure responsible management (stewardship) of water resources. the vision of responsible management of water, recognising the interconnectedness of natural ecosystems and man, to protect and realise the right of all

individuals to water, is very much in harmony with Shari'a and the principles surrounding water in Islam.

It is also important that the wording of target 6.1, addresses the right to safe and *affordable* drinking water – a wording that allows for the commodification, privatisation and sale of water. Although the issues of water commodification, sale and private ownership of water resources and water systems are the subject of intense debate in academic and international development spheres (Budds and McGranaham, 2003; Warner, 2021), as was discussed earlier in this chapter and in chapter 2, Islamic law and tradition does allow for the ownership and sale of water, albeit under certain conditions, and with differing opinions between schools of Shari'a (Zouhaili, 1992; Caponera, 2001). The inclusion of the term affordability in the language of 6.1 fortuitously aligns with this understanding.

When moving beyond broad, aspirational soft-law goals and principles regarding water in International Law, to more specific, binding provisions of the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses, that the harmony and alignment between the principles enumerated in international law and the Islamic tradition and Shari'a continue to apply. Although as noted above, some of these principles may require the use of *Quiyas* by Islamic scholars to clarify and concentrate broad principles, and in particular to connect the provisions of Shari'a regarding correct governance and sharing of water resources within a State to situations involving two or more States, there is still much common ground to build upon, and an argument to be made that International legal instruments are in some ways simply 'catching up' with the wisdom and principles established in Shari'a. This research is examining the Watercourses Convention, as opposed to the later *Draft articles on the Law of Transboundary Aquifers 2008* (UNG, A/63/10, 2008), as the Watercourses Convention has entered into force in 2014, and in the absence of an international legal instrument addressing groundwater and/or aquifers specifically and exclusively, remains the governing framework for transboundary aquifer and groundwater management (Eckstein, 2017, 2021). Article two of the Watercourses Convention does clarify that groundwaters fall under the scope of the convention and its provisions.

Article five of the Watercourses Convention emphasizes '*equitable and reasonable utilization and participation*' of international watercourses (1997 Convention on the Law of the Non-navigational Uses of International Watercourses, UN, 1997), as well as obligations to 'cooperate in the protection and development' of these bodies of water. Article six identifies

as constituent factors of the definition of equitable and reasonable use factors such as the effects of use in one state on other states, the needs of populations dependent on the watercourse in each state, and the protection of the water resources of the watercourse, including future use (1997 Convention on the Law of the Non-navigational Uses of International Watercourses, UN,1997). Again, this research would argue that there is much in common with this framing of responsible and equitable management of international watercourses and with the general principles of *tawhid*, *khilâfa* and *amanah* as they have been interpreted by Islamic environmentalists. The provisions requiring consideration of the effects of use on other users are aligned with the guidance of Shari'a on allowing use by individuals to the extent that said use does not risk the ability of others to draw on the same water source (Kadouri et al, 2001). The language of Article eight, on cooperation, which cites "mutual benefit and good faith", although general and applicable to a variety of contexts, is, this research would suggest, entirely consistent with the received obligations and principles contained in the concept of the *ummah*.



## *Chapter 5*

### *Conclusions*

As an increasing number of MENA countries aspire to develop a theory and practice of Islamic Statehood, often evidenced in the explicit requirements contained in the constitutions of many of the countries concerned that national legislation be formulated in adherence to Islamic law. Inevitably, this has created tensions with an international legal order that, by necessity, develops treaties, guidelines and working principles at a high level of generality in order to embrace multiple political and social constructs. In the case of transboundary water governance – and particularly the governance of groundwater sources such as aquifers – where International Law is itself limited to a small number of treaties and international normative guidance such as the Sustainable Development Goals, identifying Islamic forms of governance and law presents a considerable challenge. This research, though, has identified potential elements of Islamic law and Shari'a that hold potential for developing Islamic forms of governance of aquifers that are, nevertheless, compatible with the rules-based legal frameworks developed in the international community.

Islam and Shari'a has a rich tradition of examining questions related to water - who has the right to it, for what purposes, and how it should be managed and distributed. Within that tradition, the right to water, and the obligations on Muslims to ensure that water is available to those who need it, are well established. Additionally, in recent years, a growing number of scholars and activists have been developing theories of Islamic environmentalism. Building on the work these scholars have undertaken to elaborate environmentally orientated understandings of the key principles of *tawhid*, *khilâfa* and *amanah*, and identifying key *fiqh* that have been issued over the years with regards to water, it is possible to identify the key elements that could be used by concerned actors to formulate a distinctly Islamic theory of management of transboundary aquifers.

The concept of the *ummah*, and its continued importance to Muslim communities worldwide, could provide an additional underpinning for such a theory, speaking specifically to the cross-border nature of mutual obligations amongst Muslim-majority countries. Given the predicted shortage of water sources in the MENA region, and the necessity to preserve and manage

existing resources as efficiently as possible, exploring the possibilities for such a theory is relevant not just for scholars of Islamic law and tradition, but for consideration by practitioners in the field of water management and policy.

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