

# Legal pluralism and unofficial law in Lebanon: evolution and sustainable development of water

Georges Gharios 

*UNESCO Centre for Water Law, Policy and Science, University of Dundee, Dundee, UK.*

*E-mail: g.gharios@dundee.ac.uk*

---

## Abstract

In Lebanon, the organization of the water legislation dates back to as far as antiquity. While customs and habits used to govern water in the past, codified laws and their associated legal infrastructure are present nowadays, and cohabit with persisting unofficial law. Mesopotamian, Roman, Ottoman, and French water laws were superimposed on Muslim customs and practices and traditional Arab social water arrangements in Lebanon, throughout a long history of conquests or mandates. Traditional customs and practices of water use that evolved into lore are still prevailing today, and go hand in hand with a palimpsest of water laws. Through a review of the co-evolution of thousands of years of written and unwritten water-related texts, the unique features of a hydro-palimpsest that combines formal and informal systems are put into value in an effort to explore their future potential in the sound and efficient management of water, in light of rapid global changes affecting the resource.

*Keywords:* Custom and practices; Lebanon; Legal pluralism; Unofficial law; Water law

---

## Introduction

The organization of the water legislation in Lebanon dates back to as far as antiquity, when ancient people realized that water is a common good that needs to be regulated, protected, and conserved in order to prevent conflicts and problems. Fraternal pacts were common among water users where water was always a bone of contention and force was the arbiter of water rights (Baasiri & Ryan, 1986). While customs and habits used to govern water in the past, codified laws and their associated legal infrastructure are present nowadays, and cohabit with surviving unofficial law. Mesopotamian, Roman, Ottoman, and French water laws were superimposed on Muslim customs and practices and traditional Arab social water arrangements<sup>1</sup> in

---

<sup>1</sup> Social water arrangements are customary habits and practices or informal deals that happen within a community, in order to manage the allocation and usages of water. These arrangements are not universal and vary geographically.

doi: 10.2166/wp.2020.224

© IWA Publishing 2020

Lebanon, throughout a long history of conquests or mandates that spanned over 4,000 years. As the succession of the civilisation dominated the region, new water texts were imported and superimposed on anterior ones creating a unique legal pluralism. This palimpsest of water laws goes hand in hand with a multitude of ancestral social water arrangements. For a long time, and before the creation of the Lebanese state in 1920, the organization of water management was done by users, guided by precept, but on the basis of customs and practices that had the force of law. The development of agriculture has required the individual to abide by a number of rules for the conservation of property rights and for rights of periodic distribution of water among all concerned (Mallat, 1995). Indeed, even before the promulgation of law texts, citizens were progressively agreeing on a certain number of traditions related to the allocation of water resources to have an equitable use and avoid permanent conflicts (Mallat, 2003). Customs and practices have been imposed by concern of the conservation of properties and fair allocation of water between users.

It is in the context of worldwide attention and curiosity in indigenous peoples, their unique systems of values, knowledge and practices, and in the context of global efforts at embracing their customary management, social arrangements and rights pertaining to water, that the case of Lebanon is presented. Lebanon is one of the most religiously diverse countries of the Middle East. The diversity of local communities and their modes of management have produced a vast body of law and knowledge and know-how from which lessons can be drawn. Eighteen different religious communities exist in Lebanon, where Muslims and Christians have cohabitated for centuries. Indeed, the structures imposed by the geography of the sites, and the fine and diversified human relations elaborated and often institutionalized over the centuries, constitute the original features of a country whose geographical and political unity is based on the richness of differences rather than on the strengthening of similarities. In this paper, the legal history of water allocation in Lebanon throughout the different episodes of time, from pre-Islamic times to the modern state of Lebanon, will be reviewed. The focus of the paper is on the role of ancestral indigenous water arrangements, customary laws, and inherited practices, and examines the extent to which customary law practices continue to exist in the context of water resource governance and their effectiveness in the management of water governance for sustainable development. Those arrangements are interesting because they follow a bottom-up approach to land and water management in the middle of a sea of top-down statutory laws. We will witness in this paper how traditional knowledge preserved the ecosystems of centuries and millenaries especially because the indigenous livelihood respected and protected the natural resource. This work researches the co-evolution of both the formal and informal water laws through 4,000 years. It posits that Lebanon forms a hydro-palimpsest of legislative and administrative water competence, with the objective of exploring their future potential in the management of water. It combines written formal texts with customary, locally developed water arrangements, and it is based on reviewing and understanding the set of laws at play, in an effort to explore their future potential in the sound and efficient management of water, in light of rapid global changes affecting the resource.

## **Written texts: plural water laws**

### *Ancient codes of law*

During most of the 20th century, the law codes of Hammurabi (1792–1750 BCE) were heralded as the earliest known laws until the discovery of other bodies of laws that date back to earlier epochs. Indeed, the law codes of Ur-Nammu (2112–2095 BCE) or Lipit Ishtar (1934–1924 BCE), among others, contain

several sections of law that range from water allocation to marriage, murder or theft. An even earlier theoretical conception of law already existed in ancient Egypt (2375–2345 BCE): Maat, the Egyptian goddess of truth and justice who incarnated the concepts of societal truth, balance, order, harmony, law, morality, and justice. Declarations and negative confessions to Maat hinder someone to reject water during flood season and prevent another one from stopping the flow of water. Most importantly, they raised the water-related texts to the level of severe punishable unlawful acts such as murder, robbery, or adultery.

The Mesopotamian kingdoms of Assyria and Babylonia codified bodies of laws and developed structured juridical systems which were observed by the early cultures that flourished in the region<sup>2</sup>. Long before the emergence of the apodictic<sup>3</sup> and casuistic<sup>4</sup> Biblical laws, highly sophisticated systems based on fundamental laws formed part of a universal order. Legal clauses and phrases were often compiled into law codes written in cuneiform Acadian or Sumerian. It is the code of Ur-Nammu<sup>5</sup> (2112–2095 BCE), discovered in the 1950s and 1960s, that is widely considered as the oldest known extant code surviving today. Once again, water texts were present side by side with crime texts in this 4,000-years old code. Another ancient Mesopotamian code of law that elaborated texts related to the field of water is the code of Lipit Ishtar<sup>6</sup>, king of Isin (1934–1924 BCE) in modern Iraq. With more than a hundred years of advance, the code of Lipit Ishtar was definitely the precursor to the more recent Babylonian code of Hammurabi<sup>7</sup>. The latter's reign was characterized by his title, the King of Justice (*šar mišarim*). He is best known as a land builder (*bani matim*) for the many building and canal projects he constructed and the strong centralized control of water he engineered to prevent carelessness and waste. The prologue of the Hammurabi Code contains 26 reasons for praising the king, of which, half except one refer to his activity as water ordainer (Caponera, 1992). After the death of Hammurabi, the code has become a 'classic' and has impacted contemporary legal systems because it introduced the idea of people having accountability for their actions and the idea of having rules based on morals (honesty, respect, etc.). However, it is not before the Romans that law was regarded as a science and the orators of Ancient Rome became the first ever lawyers.

### *Classical Roman law*

Lebanon became part of the Eastern Roman provinces as *Provincia Syria* around 64 BCE. The Roman emperor Claudius, who ruled from 41 to 54 CE, was the first sovereign to legalize advocacy as a profession and allowing the Roman advocates to become the first jurists who could practice openly. A marble slab recently unearthed in the ancient city of Laodicea on the Lycus<sup>8</sup> in modern Turkey revealed

<sup>2</sup> The area stretched from today's Iran in the east to the shores of the eastern Mediterranean, and from Asia Minor on the north to the borders of ancient Egypt at the south.

<sup>3</sup> Absolute divine prohibitions.

<sup>4</sup> Case-based reasoning.

<sup>5</sup> Ur-Nammu was the founder of the Third Dynasty of Ur in Sumer, Mesopotamia and was a well-known state-builder, constructor, and lawmaker.

<sup>6</sup> Lipit Ishtar was the fifth ruler of the first dynasty of Isin who came to power in order to establish justice and well-being for his people as stated in the prologue of his Code of Law.

<sup>7</sup> Hammurabi was the sixth Babylonian king of the Amorite 1<sup>st</sup> dynasty who ruled between 1792 and 1749 BCE.

<sup>8</sup> A Hellenic city that later came under Roman rule: it is nowadays located near the modern city of Denizli.

a 1,900-year-old Roman ‘water law’ inscribed in Greek. This law dates back to the year 114 CE, was carved on a 90 × 116 cm marble block, and contains highly detailed information on water control from nearby mountains and on the use of fountains. Beirut in Lebanon played a major role in functioning as the Roman Empire’s pre-eminent center of jurisprudence and was known as *Berytus Nutrix Legum*<sup>9</sup>. The strong reputation held by the law school of Beirut raises question marks about the role played by Beirut’s jurists and students at the law school of Beirut<sup>10</sup> in drafting the Ancient Riparian Doctrine or common law of water developed within the Institutes of the Justinian Code in the 6th century CE that provided the framework for water allocation throughout the Roman Empire. Domitius Ulpianus, one of Rome’s most famous jurists, a teacher at the law school of Beirut, and a native of Tyre in Phoenicia (ancient Lebanon), is credited to be the author of at least two-fifths of the *Digesta*, the shortened version of the Justinian Code. In the *Digesta*, several topics related to Roman water law were dealt with, including rivers, rainwater, drip, springs, waterworks, sewers, reservoirs, irrigation, water rights, and right of way. One major doctrine developed within the *Institutiones of Corpus juris civilis* concerns ancient water allocation law throughout the Roman Empire: Ancient Riparian Doctrine. The riparian (from the Latin *ripa* for shore) water right is a doctrine that manages the allocation of water among owners of lands that are adjacent to bodies of water<sup>11</sup>.

### Islamic law

During pre-Islamic times or *jahiliya* (Ignorance), tribal societies developed around oases, springs, or watercourses and fraternal pacts were settled among those people to regulate their relations in regard to water rights (Caponera, 1973). The possession of water was governed by established customs. Water regulations were not established, leading to many blood struggles (Caponera, 1973) and frequently, force made the law and was often the arbiter of water rights (Baasiri & Ryan, 1986). It is not before the 7th century CE that Muhammad<sup>12</sup> preached water sharing and water conservation as an act of religious charity that had the force of law in order to end water-related murderous behavior. During that time, the *Quran* was compiled into a single volume and the *Sharia* was developed within the frameworks of the holy book. This era witnessed the introduction of a number of legal concepts and institutions and the establishment of several schools of Islamic jurisprudence (*fiqh*). Lebanon was one of the very first regions to embrace the Islamic laws and jurisdictions since the 7th century CE, however, *dhimmi*<sup>13</sup>-s were exempt from certain duties assigned specifically to Muslims.

Water is considered one of the most profound elements in Islam and is deeply embedded in Islamic beliefs and scriptures. The word *maa* (water) appears 63 times in the *Quran* and the word *nahr* (river) 52 times. Moreover, the *Quran* gives 23 attributes for water<sup>14</sup>, and provides the central tenet of water resource management. *Sharia* is the religious law of Islam that represents various doctrinal norms,

<sup>9</sup> Beirut Mother of Laws.

<sup>10</sup> In 551 CE, a massive earthquake followed by a tsunami and a fire annihilated the city.

<sup>11</sup> It states that water flowing in a stream is part of a “negative community”, like air, sea, seashore, sand, or wildlife, that belongs to the public “by natural right” to be used by fishermen and for navigation and cannot be controlled by individuals. Those resources belong to everyone and therefore can be owned by no one.

<sup>12</sup> Prophet and forefather of Islam.

<sup>13</sup> A term referring to non-Muslims living in an Islamic state with legal protection.

<sup>14</sup> Earthy, purifying, potable, holy, etc.

rules, beliefs, and practices. According to Ibn Manzoor (1232–1311 CE)<sup>15</sup>, *Sharia* means the place from which one reaches water. During pre-Islamic times, and before being a generic term for Muslim law, *Sharia* denoted a series of rules about water use or the law of water ‘*shoraat al-maa*’: those were permits that gave right to drinking water.

Islam considers water as one of the three indivisible things: grass<sup>16</sup>, water, and fire. Although the prophet Muhammad makes the importance of water and law clear, and the Muslim jurists ensure highly sophisticated system of rules, most of the texts related to water in either the *Sharia* or the *Sunna*<sup>17</sup> deals with drinking or purifying water. The relatively few *hadith-s* concerning water appertain to rights of ownership of wells and springs, to rights of access to water, the obligation to share water, and prohibitions on selling water (Naff, 2009).

Islamic jurisprudence or *fiqh* is the human understanding of the *Sharia*. Today, four Sunni schools of thoughts (*mazhab*) and three Shiite’s approach the *Quran* differently. They stipulate that every individual has the right to benefit from something that is beyond private ownership – *mubah* – that is, free of all restrictions of ownership. Islam recognizes two primary rights (Gharios, 2009): the right of thirst (*haq al-shifa*) to quench the thirst of humans and animals and the right of irrigating (*haq al-shirib*)<sup>18</sup>. The right of irrigating is linked to the land and not to the farmer; henceforth, the prophet Mohammad encouraged irrigation by halving the taxes of irrigated lands (Riachi, 2013). However, *haq al-shirib*, water schedules, canals’ maintenance, public fountains, and the status of rainwater laid very quickly serious problems. The many *mazhab-s*’ interpretations differed greatly between countries to the point that *fiqh* became a properly sizeable source of law. Since Lebanon has been part of the Ottoman Empire during four centuries, Sunni Muslims followed the *Hanafi* School, founded by Abu Hanifah (699–767 CE), and Shiite Muslims the *Jafari* School derived from the name of Jafar al-Sadek (702–765 CE), the 6th Shiite Imam. Concerning the protection perimeter, or *harim*<sup>19</sup>, all the water sources are entitled to a protection zone or inviolate zone. A *harim* is in contrast to *hima*<sup>20</sup>, the latter being an area set aside for the conservation of natural capital, typically fields, wildlife and forests.

## Ottoman period

The Ottoman<sup>21</sup> Empire founded in the 13th century CE in Anatolia by Osman I ruled over the Middle East, Greece, Asia Minor, and the Balkans for over 400 years. The first Ottoman ruler to develop a

<sup>15</sup> Referenced in *Lisan el-Arab* (completed in 1290 CE), published by Dar Sadr, Beirut in 1956.

<sup>16</sup> For it is pasture for cattle.

<sup>17</sup> Book n°40 in *Sahih al-Bukhari*: Distribution of Water.

<sup>18</sup> The difference between *shifa* and *shirib* can be understood as the difference between the right of crossing a land and the right to cultivate it.

<sup>19</sup> Not to be confused with Harem (or *Haremlik*) which has the meaning of domestic places reserved for the women of the house in Muslim families.

<sup>20</sup> The distinction between *harim* and *hima* is thought by some modern scholars to have been necessary due to a different means of deciding which regions were to have restrictions – the selection of *harim* was considered to be more up to the community while the selection of *hima* had more to do with natural characteristics of the region, which were considered to be best respected by jurists.

<sup>21</sup> Anglicized form of Osman I, the founder of the Ottoman Dynasty.

holistic secular code of law was Suleiman I ‘the magnificent’, the tenth Sultan. He collected all the judgments that had been issued by the nine Ottoman Sultans who preceded him, and issued a single legal code (Bonney, 2011). The code of law that resulted was named *kanun-i Osmani*, or the ‘Ottoman laws’ and lasted more than 300 years until the *tanzimat* reforms (Bonney, 2011). In contrast to *Sharia*, dynastic<sup>22</sup> law covered topics related to finance, land tenure, or tax collection. The secular *kanun* system was composed of *hukm-s*<sup>23</sup> and *firman*<sup>24</sup>-s, and coexisted with the religious *Sharia* system exemplifying one of the first paradigms of legal pluralism in the world. The *Tanzimat* reforms put the *kanun-hukm* into value and elevated them to the level of statutory laws. The *Tanzimat* (reorganization) reforms are the administrative and legislative reforms that modernized the Ottoman State and lasted from 1839 until 1876. During the pre-*tanzimat* period, a non-Ottoman text, a nomocanon<sup>25</sup> by Bishop Abdallah Qar’aaly<sup>26</sup>, ‘the Summary of the legislation during the Chehab Emirs period in 1733’, was published. The summary contained several chapters on water use, drinking water rights, and distribution of common canals between different properties. A whole paragraph<sup>27</sup> is specified for the water resources allocation in Mount-Lebanon during the Chehab Emirs’ period. One noticeable clause discusses the rare possibility of dissociating land transaction and water right by the authentication of the existence of water appropriation independent from land property (Riachi, 2013).

Codified and customary *Sharia*-based law of Islamic states are considered to be the basis from which emerged the Lebanese water laws (CAMP, 2003) since the Ottomans relied on these laws to develop the Ottoman law that governed the Lebanese water legislation until 1999<sup>28</sup>. During their reign over Lebanon (1515–1918), the Ottomans first codified the Muslim law in 1839 and then, during a second period of reforms (1845–1876), the civil law was codified again in what became known as the *Mecelle* Code in 1877 (CAMP, 2003). The *Mecelle* was framed on the basis of the Napoleon Code by Ottoman legislators headed by Ahmet Çevdet Pasha, and remained prevalent in Lebanon until 1932. The codification of water law was not a simple task. The role of the legislator was both conciliatory and prudent, in such a way that it had to respect the general principles of the *Sharia* and, at the same time, preserve a certain harmony between these principles and the new aspirations and needs. For these reasons, the codification of water law in the various Muslim countries, including Lebanon, was carried out in several stages: the *Mecelle*<sup>29</sup> being the first stage<sup>30</sup> (Gharios, 2009).

<sup>22</sup> Dynastic: in reference to sovereigns.

<sup>23</sup> The exact transliteration of the plural for *hukm* is *Ahkam*: A *hukm* denotes an ordinance, arbitration, or a judgment.

<sup>24</sup> A *firman* is an imperial decree or edict issued by a Muslim sovereign, in occurrence with the sultans of the Ottoman Empire, under the secular legal system.

<sup>25</sup> A collection of ecclesiastical laws consisting of elements from both the civil law and canon law.

<sup>26</sup> Abdallah Qar’aaly was a Lebanese renowned jurist and Maronite prelate who was the cofounder of the Lebanese Maronite Order<sup>26</sup> in 1695.

<sup>27</sup> Eleven provisions found in chapter 20/32, section B of the Summary of Legislation compounded and published by Paul Massaad in Arabic in 1959.

<sup>28</sup> The *Mecelle* fell into disuse and was replaced, in the Turkish Republic, by a new civil code promulgated on the 17th February 1962, however it remained in force in many Arab countries that were formerly part of the Ottoman Empire.

<sup>29</sup> The *Mecelle-’i Ahkām-ı ‘Adliye*<sup>29</sup> was first written in Turkish<sup>29</sup> and consisted of 16 books and 1,851 articles, successively published in sequences from 1869 until 1876<sup>29</sup>.

<sup>30</sup> The other stages being: the codification under the French Mandate and the uncompleted codifications undergone by the Lebanese Government since 2000.



The *Mecelle* defined water ownership and usage issues, rehabilitation of water canals, and definition of wells, springs, and rivers' protection zones (CAMP, 2003). Lebanon still has in force the articles n°1234 to 1328 of the *Mecelle* from title IV – chapter 10; those articles are still mentioned in the legal almanacs of the Lebanese law. Moreover, the Irrigation Code published by the Ottoman legislator Mohammad Rashad on the 11th February 1913 regulated agricultural water management. This text, manifestly incorrectly translated from the Turkish, is still in force in Lebanon, despite its lack of any methodological or scientific approach (Mallat, 2003). The Ottoman law has mainly been a collection of local customs and practices, and particularly in matters of irrigation, the articles of the Irrigation Code have tackled in a dull manner the actual cases, which would arise in the field of irrigation. The code is still in force without amendment by the mere fact that in Lebanon the administration has never really engaged and carried out a very large irrigation project likely to lead to a thorough revision of the legal norms of irrigation (Mallat, 2003).

### Modern texts

After the fall of the Ottoman Empire, the high commissioner of the French republic, endowed with legislative powers like the Lebanese authorities, legislated and regulated laws, inspired by French texts and indigenous customs and habits. Three fundamental texts related to the management of water resources in Lebanon were developed in French under the auspices of French lawmakers and later on translated into Arabic. The basic rule in Lebanese law is the public domainality of all the waters excluding four specific exceptions: acquired rights on water, pluvial waters, springs where flow does not exceed 2 m<sup>3</sup>/d, and shallow underground waters. The order 144-S issued on 10 June 1925 by the French high commissioner of Lebanon, army general Maurice Sarrail, later amended by the decree 11/1940, had the force of law and was related to the public domain. The order n° 320 issued on 26 May 1926 by the French high commissioner of Lebanon, Henry de Jouvenel, later amended by the decree 680/1990, also had the force of law and was related to the protection and utilization of public water. Finally, decree-law 3339/1930, published on 12 November 1930 by the French high commissioner of Lebanon, Auguste Henri Ponsot, targets the issues of land tenure. They constitute the fundamental texts governing the water sector in Lebanon (Mallat, 2003) and are still valid today, the basic principles established with the publication of these orders being unchanged until now.

After Lebanon gained independence from France in 1943, several texts related to the organization of water management and practices were elaborated including the notable decree n°14522 related to the organization of the uses of underground water published in 1970. This period also observed the creation of the Litani River Authority (LRA) on the 14th August 1954 through a law that was voted, following the concept of the Tennessee Valley Authority, for the management of the Litani basin and its associated hydraulic installations. The condition of infrastructure, in general, improved considerably between 1943 and 1975, but the civil war that started in 1975 wreaked havoc on the administration and on the equipment and installations. The decree-law 108/1983, published on 16 September 1983, regulates the exploitation of potable water. In 1999, the General Directorate of Hydraulic and Electric Resources proposed a ten-year plan (2000–2009) with the objective of implementing and insuring the necessary funds for the study and execution of waterworks. During the same year, a law, nb°67, published on the 31st March, ratified the 1997 United Nations Convention on the Law of the Non-navigational Uses of International Watercourses.

In 2000, Lebanon launched its water sector administrative reform by promulgating several laws<sup>31</sup>, later on known as ‘the laws of 2000’, that merged the Autonomic Water Offices (AWOs) into four Water Establishments (WEs) and changed the Ministry of Hydraulic and Electrical Resources (MHER) into the Ministry of Energy and Water (MEW). These laws established a new institutional policy for water management in Lebanon. Lebanon published its Environmental Protection Act on 29th July 2002 by promulgating the law nb° 444 or the protection of the environment. The water sector legal reform was launched when the preliminary draft of the Water Code was developed starting in 2003. In 2012, the Lebanese Government officially adopted its National Water Sector Strategy (NWSS), through a resolution (n° 2) and its National Strategy for the Wastewater Sector (NSWS), through another resolution (n° 35), with the goal of ensuring water supply, irrigation and sanitation services throughout Lebanon on a continuous basis and at optimal service levels, with a commitment to environmental, economic, and social sustainability (MEW, 2012). On April 13, 2018, the Water Code was finally promulgated under law n° 77. The power relations of the country economically ruled by a *laissez-faire* regime and politically governed by confessionalism, are behind maintaining this legal pluralism in water management (Riachi, 2016). This dysfunctional sectarian system also hindered rational policymaking and permitted the culture of corruption and waste.

## Customs and practices: unofficial law

### *Customary laws*

In many regions of the world, indigenous water management systems are the foundations that sustain local livelihood and national food security (UNESCO, 2006). Local populations are the producers of local livelihood and national food security, who have developed a variety of water rights and management systems in order to adapt them to the multiple local constraints and opportunities. When people build their livelihoods around water, they create relationships of collaboration and control to manage systems and build their negotiating power (Vincent, 2002). Since time immemorial, customary laws have been observed and accepted by beneficiaries all around the world, even if they were often not enshrined in any written text. Customary practices are local, regional, or tribal and have persisted in spite of the introduction of subsequent water institutions and legal systems (Caponera, 1992). Hence, anyone administering water should be aware of the existence of customary laws and of the fact that, at times, they may represent an obstacle to change when modernization or a more rational use of available water is desired (Caponera, 1992). It is true that customary systems for water governance have tended to be considered until recently as traditional, antiquated, and conservative approaches to natural resources management. However, today, viable customary law systems are viewed as dynamic and adjustable. Customary laws are flexible and are quite capable of re-inventing themselves, as well as adapting to new situations.

Before the advent of Islam, old customs, usages, habits, and practices were the foundations of Arab society and civilization. Legal anthropologists believe that consuetudinary law surely existed in parallel to the religious law during Islamic times through the various customs and habits or ‘*urf*’ present in the

<sup>31</sup> nb° 221, 241, 247, 377.



multitude of populations living in the Levant. This is one of the oldest cases of legal dualism when statutory and customary law cohabited. The *sharia* recognizes customs (*'urf*) that prevailed at the time of Muhammad but were not abrogated by the *Quran*. *'Urf* is custom or 'knowledge' of a given society and is recognized as a secondary source of law (al-Awa, 1973), in parallel with usages and habits (*'adah*) of the people. *'Urf* and *'adah* are two technical terms of Islamic jurisprudence. *'Adah* is an individual phenomenon that starts when someone repeats his own enactments at each occasion and becomes a *taqlid* (tradition) when someone else re-enacts the habits of the first person, usually within a family or neighbor relationship. When a wider audience from the neighborhood, village, or community adopts this tradition, it is called 'remembered enactment' and becomes a custom in the eyes of everyone (Sweterlitsch, 1997). Finally, when states acknowledge these habits, traditions, and customs, and ensure their fair application, they become laws. Today, in Muslim countries, customary laws form the basis of water law, especially where domestic uses and irrigation are concerned (Caponera, 1992). Irrigation management was always governed by the agreement of the different partners on peaceful manners to utilize water. These manners were usually unwritten, were transmitted through generations, and have established some rules managing the practical uses of water and particularly its exploitation in irrigation. The legislator recognized them as customs and practices. Moreover, ancient water systems or institutions are living monuments of the ingenuity of our predecessors: the dams of Shaba in Mesopotamia, the gardens of Alhambra in Spain, the water tribunals (*'Tribunal de las Aguas de la Vega de Valencia'*<sup>32</sup> – *Consejo de hombres buenos de la huerta de Murcia – Fondo juzgado de las aguas de Granada* (1501–1835 CE)), and the *aflaj* system in the Sultanate of Oman all testify to the importance attached to water in the past. One of the earliest Arabic texts explaining how to locate aquifers, dig survey wells, and build underground canals, *Anabat al-Miya al-Khofia* (The Extraction of Hidden Waters to the Surface) was written in Baghdad in the 10th century by the Persian mathematician Muhammad al-Karaji (Covington, 2006). Another example is the *Kitab al-Qina*, a code regulating water distribution drawn up by Abdallah ibn Tahir al-Khurasani<sup>33</sup>.

### *Social water practices*

Customs and practices encompass the unwritten and flexible rules, or norms that regulate a given society, and are however, not necessarily spontaneously developed by the communities. Common property regimes of governance are usually local in origin, often inter-twined with the custom, social life, and livelihoods of the users and operate without the intervention of the state (Gachenga, 2012). Folklore includes the verbal traditions, material culture, and customs common to a culture. These social arrangements are autochthonous, ancestral, and customary, and can be divided into several categories. First, the general customary arrangement is used to refer to a set of normally unwritten and flexible rules, or norms that regulate a whole society (CAP-NET, 2014). This arrangement tries to respect traditions that have come down through the generations where originally a large part of laws of most societies was derived from general customary arrangements (CAP-NET, 2014). Second, the special customary arrangements that are however rules of conduct which prevail in a special place or among a special

<sup>32</sup> Although instituted in Roman times, it has come to us as a legacy of Moorish Spain. Muslims put together a quasi-tribunal system dedicated to resolve water disputes.

<sup>33</sup> The 9th-century governor of Khurasan province in Iran.

class of people in a given country (CAP-NET, 2014). Third, customary water arrangements are a sub-category of special customary arrangement. Most special customary water arrangements entrust the ownership of water in the community, and create ‘community rights’ to water (CAP-NET, 2014).

The reasons for the adoption of social water arrangements in the past are progressively fading away, and they are generally confined to the remote and less-developed rural areas. However, although some of the customs demonstrate the features of antiquity and immemorial usage, many other arrangements reflect the dynamics of an evolving societal community (Gachenga, 2012). Therefore, it would be better to talk in terms of ‘socially determined land-use rules’ rather than ‘customary’ systems since the latter could suggest something traditional or ancient with roots in the past (Hodgson, 2004). Longtime misused and considered as traditional and obsolete, this local know-how reveal to us not only the foundations of the social and political structures of these communities, but also shed light on the relationship between society and its environment (Ftaïta, 2011). It is in this context that a profound analysis of the prevailing ancestral social water arrangements present in the Lebanese territory was conducted. This was done in order to examine the extent to which customary law systems continue to exist in the context of water resource governance and their effectiveness in the management of water governance for sustainable development (Gachenga, 2012). We were able to identify several ancestral social water arrangements that were developed in the region for the conservation of property and for the periodic distribution of water between interested parties that allowed for the mediation of disagreements between users and assured each of the equitable allocation of water to match needs. They are summarized in Table 1. Fervent defender of the saying ‘*ab antigo*<sup>34</sup>’, the Lebanese villager has rooted the inherited indigenous and ancestral social water arrangements in his mind and has developed over time a unique collective mindset that proved him right during the worst catastrophes he has experienced. Those local social arrangements for the management of water and irrigation were very complicated and hard to be understood by non-villagers and foreigners because they were mainly transmitted orally rather than written. Sharia courts in the large Ottoman cities, such as Beirut, Tripoli, or Saida, used to record issues related to land and water tenure, ownership, or inheritance rather than any civil cadastral administration, nor the *deferti-I hakani*<sup>35</sup> or *tapu tahrir defterleri*<sup>36</sup>. As a consequence, there was little administrative oversight during Ottoman times and even less during the French mandate. As well as the complexities that arose from those ancestral social arrangements for the apportioning of water and its management, sultanates and mandates disregarded these inherited practices and imposed their own laws. By their insouciance and nonchalance, the plethora of imported laws started to shake the local tissue woven since the mists of dawn between the farmers and their environment.

Indeed, over the course of history, new and often rapacious water technologies have all but replaced traditional irrigation systems and water conservation techniques in the Middle East, aggravating an impending water crisis and further complicating regional water compacts (Lightfoot, 1996). Traditional, low-impact irrigation technologies can no longer support the region’s rapidly burgeoning numbers of people (Lightfoot, 1996). For example, with the abandonment of *qanat*-s, the indigenous knowledge and community cooperation critical for *qanat* upkeep disappeared and more *qanat*-s collapsed or

<sup>34</sup> The old remain in seniority.

<sup>35</sup> Ottoman land registry also used for tax purposes.

<sup>36</sup> Ottoman taxes register that included details of villages, dwellings, household heads, ethnicity/religion, and land use.

Table 1. The social water arrangements identified in Lebanon by this study.

'Urf	Customs and habits in the Islamic world: the set of rules that a society has adopted continuously and uninterruptedly, replacing a predecessor, and has the force of law
Hima	Ancestral Charter for the Protection of Nature: The traditional Arab tribes also had a system of resource tenure and environmental protection to help safeguard nature called 'hima' to create an inviolate zone for pasture
Musha'	Communal land tenure: It is a collective land tenure system in areas where the territory was undivided. Rights to land were vested in the village community, which would then periodically redistribute those rights to its members
Sabil	Water endowment for religious properties: It is the place or the building that offers fresh drinking water, <i>sabil</i> -s are especially facilities providing free water for thirsty people who are passing by or whoever asks for it, especially travellers
Birket	Ancestral communal rainwater harvesting: depression irrigation and watering pools located in the middle of villages. They are communally owned and collectively managed, from construction to operations and maintenance. These practices are old systems (~500 years), and particular to the region of Jabal Amel (South Lebanon)
Jall	Indigenous water conservation and soil protection agricultural practices: peoples of the mountains have designed agricultural systems that protect the soil, reduce erosion, conserve water, and reverse the risk of disaster: the stonewalled bench terraces
Aouna	Rural mutual aid: Mutual aid is a social organization that is arguably as ancient as human culture since people used to gather in tribes linked by a common memory
Sulha	Traditional Arab tribal dispute resolution: It is a forgiveness ritual ceremony that has its origins in tribal and village contexts, and that is performed in Arabic cultures when a wrong has been committed and following a negotiation between conflicting parties
Mudaraba	Profit and loss sharing system in landlord–farmer partnership: It is a partnership or trust-financing contract where one partner (silent partner/financier/landlord) gives money or assets to another working partner for investing in a commercial enterprise
Chaoui	Informal Water Users' Associations (WUAs): families and farmers located around the same canal (or <i>qanat</i> ) gather in indigenous water boards that have the shape of informal (WUAs), and where the <i>Chaoui</i> is the ditch rider that manages the system

dried up (Lightfoot, 1996). As a result, a valuable cultural heritage is vanishing. At the same time, with high population growth and the need to raise living standards, competition for limited water resources is increasing. However, two examples from the region could provide incentives to modern challenges by traditional systems: one area in Karnataka, Iran has managed to overcome the dry spell by turning back the clock, seeking inspiration from medieval kingdoms using techniques developed in ancient Persia; and in Syria, with the ongoing civil war and the havoc wreaked on the national water supply system, several communal initiatives have been undertaken to restore the forgotten *qanat Romani*.

## Discussion

The current water law in Lebanon appears as a superposition of texts, the coexistence of regulations of different inspirations (Metral, 1982). French and Ottoman civil laws, as well as codified and customary Sharia-based laws constitute the foundation of the Lebanese water law. Current water use and water laws are the historical outcomes of political, bureaucratic, and managerial practices in combination with the appropriation and expansion of hydrosocial networks by agricultural water users (Wester, 2008). The current status of water management in Lebanon inherited the written and unwritten plural water laws

over the last 300 years. The evolution of the historical chronology of water through 4,000 years has been explored, crossing through the main periods of legislation from the Roman to the Ottoman empires, the French mandate, and the modern state. The customs and practices in force during the Islamic conquests of the Levant, and their cohabitating indigenous social arrangements inherited from the pre-Islamic Arabic tribes were also explored. An important legacy has been inherited from ancient indigenous water arrangements and sustainable development/community resilience. The water legal framework of Lebanon emerges as a system propelled dually by the parallel systems that exist concurrently: the *formal system* that represents the governmental institutions, mechanisms, and laws, and the *informal system* that represents the traditional customs and habits, and social water arrangements. Different aspects of the formal and informal systems will be discussed in the sections ‘Legal pluralism or hydro-palimpsest?’ and ‘Features of unofficial law’. First, we will critically discuss the concept of legal pluralism and introduce our understanding of hydro-palimpsest. Then, we will investigate the features of unofficial law and its appropriateness and suitability in attaining positive outcomes and optimal results when it comes to facing climate variability and uncertainty.

### *Legal pluralism or hydro-palimpsest?*

As we have seen, the Lebanese water décor is shaped by a plurality of organizations, institutions, and laws: rule of law, state law, customary law, law of the jungle<sup>37</sup>, religious law, regional law, international law, or traditional law are among the different legal texts that cohabit together. The presence of 17 different religious communities each having its own laws, beliefs, and customs, and the superposition of custom laws, Ottoman laws, French laws, international laws, and Lebanese laws, are in a way enriching, as well as complicating the Lebanese legal order. State law is usually strong, but in a heavily centralized administrative system such as Lebanon, rural areas receive less enforcement from the central government. This can lead to confusion and conflict, but it is also an important mechanism for adaptation of water allocation to local conditions (Merrey *et al.*, 2007). As governments create new modern water laws, there is an increasingly important issue around the incompatibility of state laws to impose uniform and relatively rigid principles and requirements, and the diversity and flexibility of local customary laws, principles, and practices (Merrey *et al.*, 2007). Cases like Lebanon have often been associated with the concept of legal pluralism, which is defined as the existence of multiple legal systems within one population or area. This concept has been used during the last 40 years to analyze complex normative systems, and is usually used to understand if the plurality of laws are facilitating or obstructing the implementation and development of sustainable water projects, and meeting a population’s basic water needs. From its very inception, this concept has been plagued by a fundamental conceptual problem – the difficulty of defining ‘law’ for the purposes of legal pluralism (Tamanaha, 2011). For decades, this issue has marked the conceptual debates around legal pluralism. Indeed, this concept refers to a context in which multiple legal forms coexist in the same social field (Tamanaha, 2011). Although several scholars have attempted to define legal pluralism, John Griffiths (1986) original definition has been widely accepted: ‘the state of affairs, for any social field, in which behavior pursuant to more than one legal order occurs’. In Lebanon, adding new laws to the water library without

---

<sup>37</sup> A situation in which there are no laws or rules to govern the way that people behave and people use force to get what they want.

reviewing or erasing them does little more than further complicate the already complex legal water pluralism. Indeed, this issue generates a static situation where room to maneuver is limited. The power relations of the country economically ruled by a laissez-faire regime and politically governed by confessionism, are behind maintaining this legal pluralism in water management (Riachi, 2016). Elizabeth Gachenga (2012) challenged the use of legal pluralism as a legal theory. Indeed, she says that legal pluralism is adopted as an approach rather than as a theoretical framework. She rather introduces the concept of the nexus of law, nature, custom, and reason. Moreover, although John Griffiths originally defined legal pluralism in 1986, he later on revised his stance and preferred the reconceptualization of legal pluralism to ‘pluralism in social control’ for purposes of theory formation in sociology of law (Griffiths, 2006). Indeed, legal pluralism in water texts may be problematic when the social and environmental dimensions are not being taken into account.

However, the structural force of the historical layers of water law goes beyond simple legislation or legal pluralism: it forms a palimpsest for social definition and contest over generations. Although Barbara van Koppen (2017) acknowledges that within legal pluralism, the various regimes can blend such as customary and religious law, the social dimension is still missing. Moreover, Roth *et al.* (2015) warned that the mobilization of notions of legal pluralism for instrumental purposes of globalizing water governance policies may cause dangerous simplifications, such as subjecting different legal orders to existing normative hierarchies. A palimpsest is a writing surface that can be cleared away for reuse, like a personal blackboard (Asbury, 2009). The term has been borrowed from textual and archeological studies (Baily, 2007), where it is defined as a manuscript page, either from a scroll or a book, from which the text has been scraped or washed off so that the page can be reused for another document (Lyons, 2011). It has been used in geographical and rural development projects (Mundy *et al.*, 2015). What distinguishes a palimpsest from other writing surfaces is that its removed contents do not disappear, but remain, obscured yet recoverable (Asbury, 2009). In palimpsests, old texts lie below but are not buried, rather, they are here to inform modern texts. The evolution of the legal library of written and unwritten texts of Lebanon, as well as the ancestral social water practices still vigorous in this country, are definitely not just a case of legal pluralism but adequately, a case of hydro-palimpsest where the multiple ever-evolving levels of interconnectedness between legal texts and social water arrangements over history are put in value. The palimpsestic approach is presented to understand judicial decision-making, and to explain why even the oldest texts remain part of our present history.

### *Features of unofficial law*

It is acknowledged that not all indigenous systems are harmoniously in synergy with nature and do not contribute to sustainable development (Gachenga, 2012). Hence, the objective of this chapter is to understand how certain customary law practices of resource governance result in positive outcomes for sustainable development. The analysis of the social water arrangements of the previous section has led to the identification of certain features common to most unofficial law systems: chthonic tradition, proximity principle, collectivism, religious conformity, conciliation, and oral tradition. These features demonstrate positive outcomes in relation to resilience and adaptability over centuries and could contribute to their potential of fostering sustainable development in natural resource governance (Gachenga, 2012). The value of unofficial law is its capability to attain optimal results with respect to future sustainable development. The features that are developed below strengthen this point. The first fundamental characteristic of customary law systems irrespective of their particular circumstances is their ‘chthonic or home-grown



nature' (Gachenga, 2012). Chthonic is a term that comes from the Greek *χθόνιος* that means 'in, under, or beneath the earth'. According to Glenn (2007), chthonic law is the law of indigenous people who live in harmony with nature. Since all humans are descended from chthonic people, chthonic tradition is therefore the oldest legal tradition. Chthonic tradition is founded on the concept of respect for, harmony with, and the divinity of the natural world (Glenn, 2007) as it is clearly noticeable in all the ancestral social water practices. The second feature is the proximity principle that accounts for the tendency for individuals to form interpersonal relations with those who are close by. In social psychology, it demonstrates how people who interact and live close to each other will be more likely to develop a relationship (Newcomb, 1960). The morphology of the farming system in Lebanon, that consists of a concentrated village where everyone lives and surrounding farmlands without any habitation, contributes to the strengthening of the proximity principle. The third feature, which is common to all unofficial law systems, is collectivism. Collectivism emphasizes cohesiveness among individuals and is based on two important principles: social solidarity and cultural identity. Social solidarity is the social capital that allows communities to unite in the face of adversity, whereas cultural identity is the sense of self-esteem and belonging that is vital to both the group and individual. Indigenous collective systems have tested capabilities in adaptive and resilient systems. Moreover, the ideologies of collectivism are deep-rooted in chthonic laws where no individual rights are found but rather the individual is submerged in the community (Glenn, 2007). Since time immemorial, indigenous populations have developed several collective systems for the management of their community and environment, such as collective leadership, collective responsibility, collective ownership, or collective economy. The fourth feature is religious conformity. It is in this region of the world that the three Abrahamic religions, Judaism, Christianity, and Islam, have developed since the 7th century BCE, 1st century CE, and 7th century CE, respectively. It is possible to witness a melting pot of Talmudic, canon, and *sharia* legal traditions with the indigenous chthonic traditions of the Levant. Indeed, customary laws are commonly interconnected with religious guidelines, and social water arrangements do not escape the rule. Another feature that is common to most customary social water arrangements is the importance that is placed on resolving disputes through an alternative method, conciliation. Indeed, in the case of conflicts, the customary nature of the social water arrangements emphasize conciliation and mediation for maintaining the harmony of the society and community, rather than penalizing the individual offender. This type of justice system is one without coercion and punishment, where the concept of peace and harmony prevails (Glenn, 2007). Disputes do occur, but they are handled through the application of consensus decision-making that applies traditional rules. Finally, the last feature that is common to most customary social water arrangements is their oral tradition. Traditional knowledge has been orally passed for generations from person to person, and some forms of traditional knowledge find expression in stories, legends, folklore, rituals, songs, and laws (Kala, 2012). In the study of law, oral tradition is a code of conduct that is either a custom with legal reference, or a spoken command that has the force of law. Orality is a fundamental concept in all the indigenous and rural communities around the world that lack the technology of writing or have high illiteracy rates. Memory energy is spread over ages and requires considerable effort in managing and storing the information and, more importantly, transmitting it through apprenticeship, observation, or practice.

In many regions of the world, indigenous water management systems are the foundations that sustain local livelihood and national food security (UNESCO, 2006). Local populations are the producers of local livelihood and national food security, who have developed a variety of water rights and management systems in order to adapt them to the multiple local constraints and opportunities. When people build their livelihoods around water, they create relationships of collaboration and control to manage



systems and build their negotiating power (Vincent, 2002). Collaboration, instead of competition, is their only way to survive and secure water rights and is a form of local, ‘contractual reciprocity’, aimed at sustaining and reproducing local water management systems as well as the households and communities that depend on them (Boelens & Doornbos, 2001; Ruf & Mathieu, 2001; Mayer, 2002). At the World Water Forum held in 2003 in Kyoto, Japan, an indigenous peoples’ water declaration avowed the traditional practices as dynamically regulated systems because they are based on natural and spiritual laws that ensured sustainable use through traditional resource conservation (WWF, 2003).

## Conclusion

In conclusion, the rationale of this paper is to investigate the appropriateness and suitability of deep-rooted social water arrangement in attaining positive outcomes and optimal results with respect to future sustainable development. The role of indigenous water arrangements, customary law, and inherited practices in developing water resources in Lebanon in a sustainable and precautionary manner were studied as well as the cumulative history of 4,000 years of legislative texts. First, an extensive historical review of all the water-related legal texts that existed in Lebanon since Egyptian times and until the emergence of the modern state was developed. Then, an analysis of the persisting social water arrangements was presented. Social arrangements find their roots in the complex ‘local law’, common property regimes, and folklore; for local rules are generally developed spontaneously by communities to allocate the use of important resources such as land and water, particularly in cases where formal rules relating to their use are ill adapted or simply not applied (Hodgson, 2004). However, although some of the arrangements demonstrate the features of antiquity and immemorial usage, many others reflect the dynamics of an evolving societal community (Gachenga, 2012), as in the cases of *Sulha*, *Birket*, *Jall* or others (see Table 1). Then, there is a discussion around the importance of the plurality of water laws within the context of Lebanon. Finally, common features to most water practices are discussed to provide a basis for understanding their importance and their future potential in the management of water, in light of rapid global and climate changes affecting the resource. In many countries, the number and intensity of extreme weather events such as hurricanes, floods, and droughts is increasing, and sea levels are rising, threatening territories, economic and social development as well as the environment. Moreover, global changes such as population increase, migration, or urbanization, are putting great pressure on the availability of the resource. In this context, there is a growing interest for a range of solutions inspired by local knowledge and indigenous practices that have proven to protect and sustainably manage water resources effectively and adaptively, and simultaneously increase the resilience of the territories to future water problems and climate risks. Traditional knowledge is often nature-based solutions that are inspired by and rely upon nature and utilize, or mimic, natural processes to ameliorate water management. These systems share positive attributes, such as resourcefulness, robustness, diversity, redundancy, adaptability, transformability, or flexibility, that explains the longevity and persistency of customary systems up to the 21st century, and assess its success in terms of sustainability and water management.

## References

Al-Awa, M. (1973). The place of custom in Islamic legal theory. *Islamic Quarterly* 17, 177–179.

- Asbury, B. D. (2009). Law as Palimpsest: Conceptualizing Contingency in Judicial Opinions (July 29, 2009). 61 Ala. L. Rev. 121 (2009).
- Baasiri, M. & Ryan, J. (1986). *Irrigation in Lebanon: Research, Practices and Potential*. NCSR & AUB, Beirut, Lebanon.
- Baily, G. (2007). Time perspectives, palimpsests and the archaeology of time. *Journal of Anthropological Archaeology* 26(2), 198–223.
- Boelens, R. & Doornbos, B. (2001). The battlefield of water rights. Rule making amidst conflicting normative frameworks in the Ecuadorian highlands. *Human Organization* 60(4), 343–355.
- Bonney, R. (2011). Suleiman I ('the magnificent'). In: *The Encyclopedia of War*. Martel, G. (ed.). Wiley Online Library, pp. 1494–1566. doi:10.1002/9781444338232.wbeow612.
- CAP-NET (2014). Capacity building for integrated water resource management, 2014, *Streams of Law, a training manual and facilitators' guide on water legislation and legal reform for IWRM*, 2014.
- Caponera, D. A. (1973). *Water Laws in Moslem Countries*. FAO Irrigation and Drainage Papers, Publications 20, no. 1. Food and Agriculture Organisation, Rome, Italy.
- Caponera, D. A. (1992). *Principles of Water Law and Administration: National and International*. A. A. Balkema, Rotterdam, the Netherlands.
- Coastal Area Management Program (CAMP) (2003). *Integrated Water Resources Management in CAMP Area with Demonstrations in Damour, Sarafand and Naqoura Municipalities*. Final Report, Ministry of Environment, Antelias, Lebanon.
- Covington, R. (2006). The art and science of water. *Saudi Aramco World Magazine*, May/June, 14–23.
- Ftaïta, T. (2011). Patrimoine hydraulique et préservation de la biodiversité en milieu aride: le cas des oasis marocaines. In *Pouvoirs, Sociétés et Nature au sud de la Méditerranée*. Dahou, T., Elloumi, M., Molle, F., Gassab, M. & Romagny, B. (eds). Editions Karthala, Paris, pp. 183–207.
- Gachenga, E. (2012). *Integrating Customary and Statutory law Systems of Water Governance for Sustainable Development: the Case of the Marakwet of Kenya*. Doctor of Philosophy School of Law, University of Western Sydney.
- Gharios, G. (2009). *Lebanese Waterways: Strengthening IWRM Through Water Users' Associations*. MSc Thesis, Wageningen University Publications.
- Glenn, H. P. (2007). *Legal Traditions of the World: Sustainable Diversity In Law*. Oxford University Press, Oxford.
- Griffiths, J. (1986). What is legal pluralism? *The Journal of Legal Pluralism and Unofficial Law* 18, 1–55.
- Griffiths, J. (2006). The idea of sociology of Law and its relation to Law and sociology. In *Law and Sociology: Current Legal Issues*, Vol. 8. Michael, F. (ed.). Oxford University Press, New York, pp. 49–68.
- Hodgson, S. (2004). *Land and Water: the Rights Interface*. FAO legislative study 84, Rome, Italy.
- Kala, C. P. (2012). *Traditional Ecological Knowledge and Conservation of Ethnobotanical Species in the Buffer Zone of Pachmarhi Biosphere Reserve, Madhya Pradesh*. Indian Institute of Forest Management, Bhopal, Madhya Pradesh, p. 194.
- Lightfoot, D. R. (1996). Syrian qanat Romani: history, ecology, abandonment. *Journal of Arid Environments* 33, 321–336.
- Lyons, M. (2011). *Books: A Living History*. J. Paul Getty Museum, California, p. 215. ISBN 978-1-60606-083-4
- Mallat, H. (1995). *Water Laws in Lebanon*, 'Water in the Middle East: Legal Political and Commercial Implications', Tauris Academic Studies, I.B. Tauris Publishers, London.
- Mallat, H. (2003). *Le droit de l'urbanisme, de la construction, de l'environnement et de l'eau au Liban*. LGDJ.
- Mayer, E. (2002). *The Articulated Peasant. Household Economies in the Andes*. Westview Press, Boulder, Oxford.
- Merrey, D. J., Meinzen-Dick, R., Molinga, P. & Karar, E. (2007). Policy and institutional reform: the Art of the possible. In: *Water for Food, Water for Life: The Comprehensive Assessment of Water Management in Agriculture*. Molden, D. (ed.). Earthscan, UK.
- Metral, F. (1982). Le droit de l'eau dans le Code civil ottoman de 1869 et la notion de domaine public. In: *L'Homme et l'eau en Méditerranée et au Proche Orient. II. Aménagements hydrauliques, État et législation. Séminaire de recherche 1980-1981*. Lyon : Maison de l'Orient et de la Méditerranée Jean Pouilloux, 1982. pp. 125-142. (Travaux de la Maison de l'Orient, 3).
- Ministry of Energy and Water (MEW). (2012). *National Water Sector Strategy*. Resolution no 2, March 2012.
- Mundy, M., ElNour, S., Gharios, C. & Zurayk, R. (2015). 'The right to the village? Concept and history in a village of South Lebanon' in a special issue of the journal *justice spatiale | spatial justice*, n 7 janvier 2015.
- Naff, T. (2009). *Islamic law and the Politics of Water, in the Evolution of law and Politics of Water*. Springer Science + Business Media B.V.
- Newcomb, T. N. (1960). Varieties of interpersonal attraction. In *Group Dynamics: Research and Theory*, 2nd edn. Cartwright, D. & Zander, A. (eds), Row, Peterson, Evanston, IL, pp. 104–119.

- Riachi, R. (2013) *Institutions et Regulation D'une Resource Naturelle Dans une Societe Fragmentee: Theorie et Applications A une Gestion Durable de L'eau au Liban*. PhD Thesis, University of Grenoble, France.
- Riachi, R. (2016) *Water Policies and Politics in Lebanon: Where is Groundwater?*. IWMI project report no 9, Groundwater governance in the Arab World – Taking stock and addressing the challenges, IWMI.
- Roth, D., Boelens, R. & Zwarteveen, M. (2015). Property, legal pluralism, and water rights: the critical analysis of water governance and the politics of recognizing 'local' rights. *The Journal of Legal Pluralism and Unofficial Law* 47(3), 456–475.
- Ruf, T. & Mathieu, P. (2001). Water rights and the institutional dynamics of irrigated systems: between state, market and community action. *International Journal of Water* 1, 3–4.
- Sweterlitsch, R. (1997). Custom. In: *Folklore An Encyclopedia of Beliefs, Customs, Tales, Music, and Art*. Green, T. (ed.). ABC-CLIO, Santa Barbara, CA, pp. 168–172.
- Tamanaha, B. Z. (2011). The rule of law and legal pluralism in development. *Hague Journal on the Rule of Law* 3(1), 1–17.
- United Nations Educational, Scientific, and Cultural Organization (2006). Water and indigenous peoples. In *Knowledges of Nature* 2. Boelens, R., Chiba, M., Nakashima, D. (eds). UNESCO, Paris, p. 177.
- van Koppen, B. (2017). Customary water rights and legal pluralism. In: *Routledge Handbook of Water law and Policy*. Rieu-Clarke, A., Allan, A. & Hendry, S. (eds). Routledge handbooks, NY.
- Vincent, L. (2002). Water rights, livelihoods and empowerment. In: *WALIR, Proceedings International Seminar on Water Law and Indigenous Rights*, March 2002, Wageningen. [www.indigenouswater.org](http://www.indigenouswater.org).
- Wester, P. (2008). *Shedding the Waters: Institutional Change and Water Control in the Lerma-Chapala Basin, Mexico*. PhD Thesis, Wageningen University.
- World Water Forum. (2003). *Indigenous Peoples Kyoto Water Declaration*, 3rd. WWF, Kyoto, Japan.

Received 2 December 2019; accepted in revised form 13 March 2020. Available online 8 May 2020