

A HUMAN RIGHT TO WATER WHILE THE WELL RUNS DRY: ANALYSING THE LEGAL AND REGULATORY FRAMEWORK OF YEMEN WATER LAW

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Yemen is currently in the midst of great unrest. Amongst many different conflicts there is one that receives less attention than others, that of water. Yemen is expected to be the first country in the world to run out of water. By 2025 the estimated 4.2 million inhabitants of Yemen's capital, Sana'a, may become water refugees. This water crisis is caused by the scarcity of available water in Yemen owing to its arid climate, limited rainfall and the absence of permanent rivers. In addition over-exploitation of groundwater and the contamination of water resources are major problems. This water crisis has brought about enormous instability and conflict in this country, resulting in about 4000 deaths a year. Furthermore, 90 per cent of the 17.5 million citizens do not have access to sufficient amounts of water and only 40 per cent have access to safe drinking water and sanitation; 80 per cent of its water resources are consumed by the agricultural sector. Therefore, aiming towards equal access to water for citizens, especially water for personal and domestic uses as formulated by the human right to water, is essential for a stable future. Law can contribute to reaching this goal.

1 INTRODUCTION

The present day Republic of Yemen was formed in 1990 with the unification of the Yemen Arab Republic (YAR) and the People's Democratic Republic of Yemen (PDRY). The two former states had sharply contrasting political systems, with policy-making in the YAR being dominated by a relatively progressive military elite who worked closely with civilian technocrats, tribal leaders and other traditional notables, whilst decision-making in the PDRY was determined solely by the Yemen Socialist Party.¹ Ranked 152 out of 162 countries in the Global Peace Index in 2013, Yemen is considered to have a very low state of peace.² Yemen has also been labelled a 'fragile state' by the World Bank in 2012, which means that it lacks the ability to develop mutually-constructive relations with society and has a weak capacity to perform basic governance functions.³

However, throughout history, Yemen has been capable of adapting its water management to the circumstances of its time by using systems of terracing and spate diversion.

In addition to these elaborate systems, rules and other organisational structures emerged that were able to deal with disputes that would inevitably arise.⁴ It was not until the second half of the 20th century that water management customs were interrupted. This was caused by the introduction of innovations such as spate irrigation technology and diesel-powered tube wells, which had the ability to dig deeper wells than had previously been possible.⁵ These developments, coupled with fast population growth and expanding agriculture, increased the pressure on water resources and the systems that manage them. Currently, almost all of Yemen's water resources are exploited but the demand for water is still rising. Ninety per cent of the total of available water is used for the agricultural sector.⁶

Non-renewable groundwater is exploited at high rates. The central government is unable to deal efficiently with the challenges and the local traditional regulatory framework is confronted with issues of which it has no experience.⁷ Owing to the dwindling water resources, competition for water translates easily into conflict, resulting in about 4000 deaths a year.⁸ Studying the legal and regulatory framework which is in place therefore has both societal as well as academic relevance. The focus in the past has mostly been on technical and social aspects. However, this article adds to the debate by concentrating on the significant role played by the law.

This article analyses the legal and regulatory context that influences practices of water management in Yemen and assesses its omissions and contributing factors to resolving conflicts over water resources and securing access to water for domestic and personal use for individuals. The article shows the relationship between law in the books and law in practice in relation to securing access to water in Yemen. It shows that Yemen has a fragmented institutional structure and that conflicting provisions within the

1 Frank van Steenberg, Cecilia Borgia, Jaap Evers, Marleen van Rijswick, Daphina Misiedjan, Alberto Tjen A Kwoei, Ting Zhang, Patrick Huntjens, Rens de Man 'The political economy of water management in Yemen: conflict analysis and recommendations' (Meta-Meta, UNESCO-IHE, Utrecht University, The Hague Institute for Global Justice (THIGL) 2014) 57 <http://thehagueinstituteforglobaljustice.org/index.php?page=Publications&pid=179#yemen>.

2 *ibid* 58.

3 *ibid* 58 and OECD 'Fragile States 2013: resource flows and trends in a shifting world' (Organisation for Economic Co-operation and Development 2013).

4 C Ward 'Water conflict in Yemen: the case for strengthening local resolution mechanisms' in N Vijay Jagannathan, Ahmed Shawky Mohamed and Alexander Kremer (eds) *Water in the Arab World: Management Perspectives and Innovations* (The World Bank 2009) 233–55 at 233.

5 On the history of sustainable water use in Yemen see S C Caton 'Water crisis' in S C Caton (ed) *Yemen: Nations in Focus* (ABC-CLIO 2013) 284–93.

6 M Zeitoun, T Allan, N Al Aulqi, A Jabarin and H Laamrani 'Water demand management in Yemen and Jordan: addressing power and interests' (2012) 178(1) *The Geographical Journal* 54–66 at 56.

7 *ibid*.

8 Small Arms Survey 'Under pressure: social violence over land and water in Yemen' (2010) 2 http://www.genevadeclaration.org/fileadmin/docs/regional-publications/Social_violence_over_land_and_water_in_Yemen.

legal and regulatory framework are caused by the different legal sources and values they represent. These internal conflicts worsen disputes between parties when they rely on different but equally legitimate provisions in the law or follow different interpretations of the same rule. This article provides examples illustrating how individuals apply the law in disputes and how the law influences the conflict resolution process.

Finally, the major legal challenges in enhancing access to water for drinking and domestic purposes – being the core of the human right to water – will be discussed. The analysis of Yemen water law helps to discover opportunities for improvement from a legal perspective and thereby can assist in bringing equal access to water management in Yemen one step closer.

2 RESEARCH PROJECT

In recent years, the Dutch Government has been working in Yemen, supporting water supply and water management interventions specifically focused on water conflict prevention and resolution. In 2014, the Hague Institute for Global Justice together with other organisations, including the Utrecht Centre for Water, Oceans and Sustainability Law and in cooperation with a group of local consultants conducted an inter-disciplinary study about the political economy of water management in Yemen, commissioned by the Dutch Embassy in Yemen. An analytical framework was developed to analyse the political and the conflict dimensions of water governance in Yemen.

Part of this framework was the project entitled ‘Ten building blocks for sustainable water governance: an integrated method to assess the governance of water’ developed by an interdisciplinary team of academics, which included legal aspects of the assessment of water governance.⁹ A key component was to examine how conflicts were embedded in the local physical, socio-economic, political and legal-institutional context. In order to provide in-depth analysis, nine ongoing conflicts in three areas across Yemen were chosen, including Sana’a basin, Wadi Siham and Ta’izz. These areas represented a diversity of geo-hydrological and socio-economic contexts.

In-depth interviews and group discussions were conducted in the relevant areas by the local consultants for the Water and Environment Centre affiliated to Sana’a University. They collected qualitative data from the interviews and group discussions were reviewed by the Dutch expert team, followed by a stakeholder consultation with participants from Yemen where the results of the fieldwork were discussed. The Dutch expert team then proceeded to make a report, which included recommendations. The findings of that study have interdisciplinary relevance.¹⁰ Nevertheless, this article focuses on the findings in relation to the legal and regulatory framework and uses the findings to formulate recommendations for the contribution law can make to improving access to water for individuals for personal and domestic purposes as formulated in the human right to water in Yemen.

9 See M van Rijswick, J Edelenbos, P Hellegers, M Kok and S Kuks ‘Ten building blocks for sustainable water governance: an integrated method to assess the governance of water’ (2014) 39(5) *Water International* 725–42.

10 See THIGL (n 1).

3 THE HUMAN RIGHT TO WATER AT INTERNATIONAL LEVEL

The human right to water has been subject to fragmented development within international law. However, in 2010 the human right to water and sanitation was affirmed by both the UNGA¹¹ and the UNHRC.¹² Yemen was a co-sponsor to the UNGA resolution stressing ‘the importance of water for life, which led to it being a natural right. Water was one of the greatest challenges of modern times – the oil of the twenty-first century’.¹³ Yemen also supported the UNHRC resolution as a non-member state of the Human Rights Council.

The right is authoritatively interpreted based on the right to an adequate standard of living and the right to health, as formulated in General Comment No 15 of the Committee on Economic, Social and Cultural Rights.¹⁴ It states that the human right to water is implicitly included in the International Covenant on Economic, Social and Cultural Rights (ICESCR) and that: ‘The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses’.¹⁵ Other than the right to an adequate standard of living and the right to health, the right to water can also be derived from the right to life and the right to culture.¹⁶ States are obliged (in addition to fulfilling the normative content of affordability, safety, equity, accessibility and acceptability) to respect, protect and fulfil the human right to water.

The right to water refers to the personal and domestic water uses that ordinarily include drinking, personal sanitation, washing of clothes, food preparation, and personal and household hygiene.¹⁷ Any other uses fall outside of the scope of this right,¹⁸ including water for irrigation. Some argue that the scope of the right to water should be extended to cover access to water for livelihood needs as well, such as water for the production of food to sustain life.¹⁹ General Comment No 15 does include a provision of an advisory nature, stating that:

... Attention should be given to ensuring that disadvantaged and marginalized farmers, including women farmers, have equitable access to water and water management systems, including sustainable rain harvesting and irrigation technology. Taking note of the duty in article 1, paragraph 2, of the Covenant, which provides that a people may not ‘be deprived

11 United Nations General Assembly (UNGA) Resolution A/RES/64/292 (July 2010).

12 United Nations Human Rights Council (UNHRC) Resolution A/HRC/24/L.31 (September 2013).

13 See statements from the General Assembly meeting of 28 July 2010 <http://www.un.org/press/en/2010/ga10967.doc.htm>.

14 Committee on Economic Social and Cultural Rights (CESCR) *General Comment No 15: The Right to Water* (Geneva 2003) para 2.

15 *ibid.*

16 D Misiedjan, J Gupta ‘Indigenous communities: analysing their right to water under different international legal regimes’ (2014) 10(2) *Utrecht Law Review* 77–90 at 80. For the implementation in national contexts and the European Union see H Smets (ed) *The Right to Safe Drinking Water and Sanitation in Europe/Le droit à l’eau potable et à assainissement, sa mise en oeuvre en Europe* (Académie de l’eau Editions Johanet 2012).

17 CESCR (n 14) para 12.

18 Misiedjan and Gupta (n 16) 86; see also CESCR (n 14) para 6, where priority is given to water for domestic purposes over other water uses.

19 D Ziganshina ‘Rethinking the concept of the human right to water’ (2008) 6(1) *Santa Clara Journal of International Law* 113–28 at 117. The UN Convention on the Law of Non-navigational Uses of Watercourses report also recommends such an approach.

of its means of subsistence', states parties should ensure that there is adequate access to water for subsistence farming and for securing the livelihoods of indigenous peoples.²⁰

This provision does not include a right to water for irrigation directly within the scope of a human right to water. However, it points to providing access to water with the purpose of fulfilling the right to food. General Comment No 15 even goes as far as to explain that even though water is needed for the realisation of other rights, priority should be given to the right to water for personal and domestic purposes when it comes to water allocation.²¹ This is a challenge in the context of Yemen, where 80 per cent of water resources are allocated to agriculture, whilst many still lack access to water for domestic purposes.

4 A HUMAN RIGHT TO WATER IN THE YEMEN LEGAL FRAMEWORK

Yemen has expressed its support for the human right to water at international level. The following section looks at whether national legislation supports such a concept of a human right to water, as well as at the provisions within the different sources of law which deal with water for personal and domestic uses.²² The legal and regulatory framework for Yemen concerns the analysis of: customary and traditional rules ('urf'), Islamic law (Shari'ah law), the Constitution,²³ the Civil Code and the Water Law.

The analysis considers how water for domestic use by individuals has been taken into account. One of the ways in which access to water for personal and domestic uses can be secured through law is by establishing a right to water for individuals and prioritising access to water for personal and domestic purposes. Therefore, the above-mentioned legal sources will first be evaluated as to the presence of a right to water for individuals and, secondly, as to which uses fall under this right. How such rights hold up against the rights of others is also important, especially with regard to agriculture. This will be examined in the third part of this section. First, the relevant sources of law in relation to water management will be explained.

4.1 Sources of law

There are five sources of law that influence water management in Yemen, namely customary and traditional rules ('urf), Islamic law (Shari'ah law), the Constitution, the Civil Code and the 2002 Water Law.²⁴ All of these laws refer to water in some manner and can provide a basis on which individuals can refer to in order to secure their access to water. The legal system in Yemen is subject to a certain hierarchy. At the top of the ranking is Shari'ah law, which consists of numerous instructions expressed directly in the Quran.²⁵ According to the Yemeni Constitution, Shari'ah

is the primary source of law and all other laws are seen as subordinate to it.²⁶ Therefore, in principle all legislation should be in accordance with Shari'ah. However, contradictions can be found in the overall legislation concerning water, which will be discussed further below.

The Constitution was ratified by popular referendum in 1991²⁷ and was last amended in 2001.²⁸ The current Constitution is, however, likely to be replaced. A new Constitution was drafted in January 2015, although it has yet to enter into force.²⁹ Constitutions are often considered the highest source of law within a republic.³⁰ However, the Yemen Constitution establishes Shari'ah as the highest source of law. The Constitution provides the basis for the adoption of national laws, including rules and regulations concerning water management.³¹

Local customary law – referred to as 'urf' (short for 'urf qabali) – is recognised as a secondary source of law, which consists of rules for water management developed by local communities, with consequential variations between different regions.³² Local circumstances such as climate, soil and water availability shape the development of customary rules. These rules are mostly unwritten and have been developed through traditions and customs of tribes in Yemen for generations.³³ Archaeological evidence has proven that certain rules used today for spate water management date back as far as the pre-Islamic period in Yemen.³⁴ Even though some rules date back to the pre-Islamic period, most customary rules are consistent with Shari'ah law.³⁵

Communities follow and enforce these rules themselves and local religious authorities often play an important part in determining and interpreting rules in relation to water management. Akils and sheikhs especially are seen as authoritative for dealing with conflicts. The capacity of these local traditional leaders depends on their knowledge of traditional rights and skills to lead the conflict resolution process. Customary law is still widespread and in frequent use, owing to an inherent lack of trust in the formal institutions.

The Civil Code No 14 adopted in 2002 is the primary foundation for private laws in Yemen.³⁶ It can be seen as the modern day expression of Shari'ah principles (ahkâm) and is therefore mostly in line with Shari'ah. The Civil Code consists of almost 1393 articles dealing with issues such as contracts, ownership and conflicts of laws. The code also includes concepts of ownership that apply to water and issues of land.

26 The Constitution of the Republic of Yemen 2001 (n 23) art 3

27 A Maktari, J McHugo 'The Constitution of the Republic of Yemen' (1992) 7(1) *Arab Law Quarterly* 70–82.

28 L Al-zwaini *Rule of Law Quick Scan Yemen. The Rule of Law in Yemen: Prospects and Challenges* (Hiil 2012) 38.

29 <http://www.reuters.com/article/2015/01/17/us-yemen-security-idUSKBN0KQ0AI20150117>.

30 Al-zwaini (n 28) 38.

31 A A Bahamish *Final Report On Legal Survey of Existing Traditional Water Rights in the Spate Irrigation Systems in Wadi Zabid and Wadi Tuban* (2004) 23 <http://www.spate-irrigation.org/wordpress/wp-content/uploads/2011/06/WaterRightsWadiZabidTubanEnglish.pdf>.

32 Nafi (n 24) 39.

33 On the tribal system in Yemen see S Weir *A Tribal Order: Politics and Law in the Mountains of Yemen* (British Museum Press 2007).

34 Ward (n 4) 268 <not within the given page spread at n 4?>.

35 Sana'a University & Meta Meta Research *CoCooN-Integrated Project Groundwater in the Political Domain* (2012) 6.

36 Al-zwaini (n 28) 51.

20 CESCR (n 14) para 7.

21 *ibid* para 6; see also I Winkler *The Human Right to Water: Significance, Legal Status and Implications for Water Allocation* (Hart Publishing 2012).

22 As set out in General Comment No 15: consumption, cooking, personal and domestic hygienic requirements.

23 The Constitution of the Republic of Yemen 2001.

24 See further Malcolm Langford, Anna Russell (eds) *The Right to Water: Theory, Practice and Prospects* (Cambridge University Press 2014).

25 T Nafi 'Islamic law and the politics of water introduction : water, society and law' in J Gupta, J W Dellapenna (eds) *The Evolution of the Law and Politics of Water* (Springer 2009) 37–52 at 39.

The Water Law No 33 was adopted in 2002 after a long process of drafting, discussing and amending.³⁷ With this law Yemen had its first attempt at integrated water resource management (IWRM). Owing to the lapse of a considerable time since its adoption and the weighing of interests during the drafting process the Water Law has certain gaps and ambiguities, and for this reason regulations such as republican decrees, resolutions and the Ministry of Water and Environment's Decree were issued subsequently to support and enforce the Water Law.³⁸ This law also established a new organisation, the National Water Resources Authority (NWRA), to deal solely with water issues.

The relevance of five different legal sources dealing with subjects like such as water ownership, resources allocation and user or stakeholder participation makes the management of water resources complicated. It could be said that insufficient attention has been paid to how the different legal sources interact in practice and whether the rules are properly accepted, implemented and enforced.

4.2 Water rights and ownership

The above-mentioned legal sources include rules that relate to ownership of water and the water rights individuals may acquire. These water rights are based on different sources and are different in nature. Some water rights, for instance, are based on land ownership, whilst other are use-based rights or on the mere fact that a person is human and has a right as an individual.³⁹ Interestingly, the different legal sources related to the Yemen legal framework relating to water are not consistent and include conflicting provisions which will be explained below.

What is relevant first of all is to determine who has legal ownership of water. According to the Constitution, the state is the exclusive owner of all types of natural resources including water and is supposed to use the resources for the common good of the people.⁴⁰ For this reason, it is the state that can allocate water and can also assign rights to individuals. Shari'ah law does not follow this line of reasoning as it sees water as 'Mubah', meaning that in principle it is nobody's property.⁴¹ Because of this everyone has the right to free access to water, which should not be hindered. However, when water has been separated from the source and is contained for instance in a receptacle it may be privately owned. It may also be sold under these circumstances. In line with Shari'ah law, the Civil Code explains that water is originally *res nullius*, belonging to nobody and that it may be appropriated and contained in wells and pipes and other receptacles.⁴² Thus, it is not inappropriate for it to be sold.

The Water Law follows the concept of ownership of Shari'ah law. It states that: 'The water is in principle

permissible for all and does not possess a private ownership except by means of conveyance or acquisition or within their rule and it is the optimum to be secured by what is similar to it'. Nevertheless, many issues in relation to water are subject to administration by state authorities, such as digging wells exceeding 20 metres.⁴³

These provisions show that there is an inconsistency in Yemen water law in relation to ownership. On the one hand, water is owned by nobody and freely accessible, which is in line with Shari'ah. On the other hand, the state considers itself owner of all water resources and formulates rules accordingly. Nevertheless, it seems that there is consensus about water having to be freely accessible to all. The sources, however, point to different parties assigning control over the sources.

The legal sources also set priorities in relation to water use. In the Constitution there is no explicit reference to priorities for water use. However, a provision of the Constitution allows for the implicit priority setting by applying Shari'ah Law. Article 3 states that: 'Islamic Shari'ah is the source of all Yemen legislation'. By interpreting different water-related *sharia*, *hadith* and custom, a picture can be painted of the characteristics of a right to water according to Shari'ah law:

Islamic water law is largely customary, highly pragmatic, and supple in its application of moral principles and guidelines. Persons may not be denied the water necessary for survival or livelihood, and while animals have clear legal rights to water, humans take precedence. Drinking water for man and beast and water for domestic uses take priority over agricultural needs. Once all drinking and domestic requirements of the community are satisfied, sharia recognized a right to irrigated land – *shirb*.⁴⁴

Therefore, the Constitution implicitly recognises a human right to water for individuals and gives priority to access to water for personal and domestic use.

The Water Law No 33 of 2002 follows Shari'ah and states in Article 20 that: 'Drinking water and household uses are favored with absolute priority'. Other water uses are mentioned in Article 21 and favour priority in the following order: water for animals, public utilities, irrigation, industrial purposes and minimum environmental requirements. The Water Law further explains that water may be sold and distributed for drinking purposes in barrels or mobile tankers only if these means are hygienically suitable.⁴⁵

Other than this the Law states that authorities are allowed to make decisions about transferring water from one zone or basin to another. This process, however, may not endanger the anticipated quantity of water available for drinking and household uses in the donor zone and should first be used to anticipate the drinking and household needs of the receiving zone.⁴⁶ In addition to these provisions, the Law also assigns criminal liability for disobeying quality standards for water for domestic and drinking purposes.⁴⁷

Therefore it is clear that, in principle, water is freely accessible and that priority should be given to water used

37 T Richards *Assessment of Yemen Water Law: Final Report* (Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH 2002) 1.

38 THIGL (n 1) 193–203.

39 G S McGraw 'Defining and defending the right to water and its minimum core: legal construction and the role of national jurisprudence' (2006) 8(2) *Loyola University Chicago International Law Review* 127–204 at 150–51.

40 The Constitution of the Republic of Yemen 2001 (n 23) art 8.

41 Naff (n 24) 48.

42 B Bruns, T Taher *Yemen Water User Association Study: Findings and Recommendations for a Problem-Solving Approach* (Sana'a: Groundwater and Soil Conservation Project 2009) 15.

43 Water Law No 33 of 2002 art 35.

44 Naff (n 24) 44.

45 Water Law No 33 of 2002 art 22.

46 *ibid* art 50.

47 *ibid* art 71.

for drinking purposes followed by other uses. Nevertheless, the right to water within the national legal framework does not have complementary rules or regulations supporting the right in order to facilitate implementation.⁴⁸ This is contrary to provisions concerning water use for agricultural purposes, which have been further elaborated upon within the law and have been followed up by policies.⁴⁹ For instance, the human right to water as formulated in General Comment No 15 mentions as its core content not just the mere formulation of a right but components such as quantity, safety, accessibility and affordability. These components need to be delineated and implemented in national laws in order effectively to implement the right. In addition, owing to conflicting priority settings, **the assumption is developed that conflicts when the laws are applied<sense?>**.

5 THE HUMAN RIGHT TO WATER IN SELECTED CASE STUDIES

The legal and regulatory framework has been explained. Now it must be asked whether the right to water for individuals under the Yemen regulatory framework provides enough support for individuals to claim access to water for domestic purposes and see to it that it is prioritised over other water uses. The following case studies deal with the allocation of water in several different situations. They show in a specific context how different water uses relate to each other and how individuals strive to have their access to water secured by applying the rules. The case studies include a description of the context, the problem, the rules that were applied to resolve the conflict and whether the problem was resolved.

5.1 Bani Matar

Bani Matar is an area in the Sana'a basin that consists of four villages scattered across the side of a mountain. The villages profit from a continuous natural flow of stream water (ghail) called 'Ghail Mahiab', which is their main source of drinking water and which is also used for domestic purposes. A disagreement occurred between the upstream villages and the downstream villages. The villages had agreed 'not to grow crops nor herd cattle nor dig any well in or around the path of the ghail in order to protect its flow'. However, in early 2014, farmers from Jalal village, one of the upstream villages, started to dig four shallow wells near the stream. According to the downstream villages, the digging of the wells affected the water flow of the Ghail Mahiab, causing some spring sources to stop producing water. The people from Jalal claim that they have documents that allows them to dig wells at mentioned locations, written by a committee of the Ministry of Agriculture, 21 years ago. The downstream villagers consider that these documents have lapsed.

5.1.1 Use of legal rules

In general the rule of 'Al Ala Fala'Ala' applies to surface water flood flow. The rule means that the upstream land

has the priority of water use, followed by the land that is situated below, and so on all the way down to the lowest levels of the stream. This rule would suggest that the people from the upstream villages have priority of use with regard to the Ghail Mahiab. Nevertheless, from the data collected from an interview with a villager of one of the parties, it seems that the ghail has its own rules. One of them is the Shari'ah rule of 'La Dhur Wla Dhirar', which means no harm may be caused with regard to both sides. In this case it means that a solution has to be found by the two parties that does not have any harmful effect to either side.

After a failed attempt to mediate between the parties by the Mashaiikh, a local tribal leader, the issue was brought to the NWRA. The NWRA was asked to send a specialised engineer and to give a judgment that would be final and accepted. In March 2014<update?>, the parties were still waiting for the NWRA's report.

5.2 Taizz

The Taizz region is located in the south-western Yemen Mountains in the upper part of the Wadi Rasyan catchment. The water resources in the region are highly dependent on rainfall, which is unpredictable. It varies from one sub-area to another, even varying within the same catchment. Three aquifers are present in the region. Almost all streams in the Upper Wadi Rasyan catchment are contaminated by domestic and industrial waste water, with domestic waste water comprising the biggest share. The industrial waste water remains unmonitored with the effect of having heavy metals spread freely.⁵⁰ For individuals there are six main sources for water, namely the public water supply NWSA, privately piped supplies, tanker supplies, bottled water and freely available water supplied by the government or, for instance, mosques.⁵¹

The case studies in Taizz show that water disputes occur owing to the unregulated drilling of wells. In the last three years disputes have increased drastically. The interviewees expressed their concern about the lack of rain, the ineffectiveness of government and the worsened security situation, which have all negatively influenced water disputes. Also, water is frequently relocated from one area to another to irrigate qat crops. Over-consumption of water for qat is considered to have escalated the water issues in the area.

Qihaf and Uqf are two villages located in Bani Yusof, a part of the Ta'izz region. The villages are situated in the mountains and are separated by a wadi. Most of the inhabitants' subsistence depends on skills such as carpentry and agriculture. Generally, those who grow qat use rain water rather than groundwater. For Qihaf, the water supply for domestic purposes depends on a 33-year-old well in the valley and, in 2012, villagers completed the construction of a system that pumps water from the well to a reservoir in their village.⁵²

At the end of that same year, one of the villagers of Uqf started digging multiple wells, including one just 170 metres from the one used by Qihaf. The people of Qihaf

48 See for instance B M Meier, G L Kayser, J G Kestenbaum, U Q Amjad, F Dalcanale and J Bartram 'Translating the human right to water and sanitation into public policy reform' (2014) 20(4) *Science and Engineering Ethics* 833-48 at 125<given page ref does not fall with journal range?>.

49 Zeitoun and others (n 6) 58.

50 See (Handley, 2001) <no reference?>

51 THIGL (n 1) 143.

52 ibid 148.

felt that this fourth well was too close to theirs, so they filed a complaint with the local security services and paid soldiers to deal with the situation. The security forces were unable to resolve the situation and after a violent confrontation between the people of both villages, the people of Qihaf decided to report the situation to the local prosecutor. The prosecutor's office put the representatives of each village in jail, talked to both the parties, visited the site and in the end suggested arbitration. Qihaf villagers argued that they were not opposed to the digging of wells by the Uqf villagers, but the problem was that the villagers of Uqf did not respect the rule that the distance between wells has to be a minimum of 500 metres and that the Qihaf villagers had even respected the traditional rule to allow the women of Uqf to use their well to wash their clothes.⁵³

Two traditional rules have been mentioned in this case. The first one is the general rule based on Sharia'h law that water has no owners and thus everyone is allowed to use water.⁵⁴ This rule is usually respected, even if water sources belong to an individual or community, as is the case with Qihaf's well. The second rule is the rule that there has to be a minimum of 500 metres between two deep wells.⁵⁵ It is a rule that is recognised as customary law to protect the quantity of water. In addition to the traditional rules, one formal rule is applicable, as the Water Law stipulates that permits are needed for the drilling of wells. These are usually issued by the NWRRA.⁵⁶ Nevertheless, it is unclear if this rule is known to the villagers or if any permits were given by the NWRRA.

Usually the aqils, who are the heads of a tribal branch, are responsible for arbitration and the regulation of conflicts in everyday life.⁵⁷ Also in this case the parties relied on the aqils to resolve the conflict, but the local aqil further escalated the conflict by choosing the side of the Uqf village and he was put in jail owing to his behaviour.⁵⁸ Besides the aqil, one of the parties contacted the prosecutor's office, which suggested arbitration. This also was unsuccessful, as the Qihaf villagers refused this option. They felt unable to make any compromise with regard to their only water source. As at May 2015 the dispute remains unaddressed and unresolved.⁵⁹

5.3 Conclusion

From these case studies several issues can be distilled. First, they show that the rules governing water in Yemen are very fragmented. This is true not only regarding the rules but also those organisations who base their authority on those rules execute their tasks randomly. One of the consequences is that individuals are motivated to 'cherry-pick' or forum shop,⁶⁰ choosing those rules and institutions which will support their claims.⁶¹ Secondly, the case studies show that even though traditional and local rules

are preferred, they often do not resolve the conflict, for a variety of reasons. Thirdly, the involvement of intermediaries and institutions which themselves have interest in certain conflicts as for instance landowners or water users complicate and may sometimes intensify conflicts. Lastly, the manner in which water is allocated in reality is not in line with the human right to water.

6 RESULTS AND DISCUSSION

6.1 Freely accessible water does not necessarily translate into equal access to water

Water is considered to be Mubah and therefore freely accessible to all. This idea is supported by customary law, which dictates that if a well exists those who are in need of drinking water may take water from this well and their access to it cannot be obstructed. However, this does not necessarily mean that therefore everyone has access to water. The Yemen case studies show that even though water is freely available only those who have the technical and financial means to extract it and, if necessary, purify it have access to water suitable for domestic and personal uses. Only a small percentage of households are connected to the municipal water supply. Most of these households are located in major cities, whilst 70 per cent of Yemini live in rural areas.⁶² Those without access try seek it by installing water tanks, which provide water at higher costs so that these individuals may only receive the amount of water they are able to afford at the time. This situation is undermining the affordability and quantity aspect of the human right to water.

Both in the academic discussion and out in the field the question arose as to whether water should be provided free of charge as it is considered to be a human right. The former Special Rapporteur on the human right to water and sanitation argued that:

Opposition to commercialisation often leads to the call for water to be provided free of charge, some linking the fact that water is a human right to the allegedly inevitable consequence that it should be provided free of cost. However, the reality is that, whilst water itself might be free, it costs money to purify it and monitor its quality, to build and maintain infrastructure and to transport it to peoples' homes. These services and structures have to be paid for.⁶³

This is clearly visible in the Yemen case studies. Although the water is considered to be freely available, funds for the service are necessary. The municipal supply is heavily subsidised. However, the infrastructure has been poorly maintained, which over time causes problems for the realisation of the human right to water for Yemen's citizens.

In addition, even though water for drinking purposes in theory should enjoy priority over other water uses the case studies show that in practice water for domestic purposes is often overshadowed by those other uses, especially agricultural uses.⁶⁴ As a result the complementary rules

53 *ibid* 149.

54 *ibid* 92.

55 *ibid* 99.

56 See for an example of the Water Law rules on registration such as article 5 on the ownership of streams of the valleys; THIGL (n 1) 92.

57 THIGLE (n 1) Glossary 24–25.

58 *ibid* 149.

59 *ibid*.

60 See B R Brunsa, R S Meinzen-Dick 'Water rights and legal pluralism : four contexts for negotiation' (2001) 25 *Natural Resources Forum* 1–10.

61 Also supported by Zeitoun and others (n 6) 55.

62 *The Guardian* <MORE?>

63 C De Albuquerque, I T Winkler (2010) 'Neither friend nor foe : Why the commercialization of Water and sanitation services is not the main issue in the realization on Human rights' (2010) 17 *Brown Journal of World Affairs* 167–79 at 168.

64 On allocation mechanisms in water law see M van Rijswick 'Mechanims for water alloction in Europe and the Netherlands: lessons from a general public law perspective' (2014) 24(3–4) *The Journal of Water Law* 141–49.

and regulations concerning access to water for domestic purposes, such as quality standards and specific targets for those without service, are lacking. Rules and regulations concerning agriculture enjoy the most attention, illustrating where the emphasis in water governance in Yemen lies.

6.2 Vulnerable groups

The case studies also implicitly show the invisibility of those whose access to water is highly vulnerable and who struggle to gain access to water. They also lack the ability to bring disputes. This can be explained because many of the rights to water are directly tied to rights to land. Therefore, those who own land or have access to land find it easier to realise their right to water.

Women are especially vulnerable in relation to access to water and Yemeni inheritance laws often leave widows and daughters without land.⁶⁵ Women very rarely own land or wells independently.⁶⁶ In addition, as is common worldwide, women in Yemen are responsible for daily activities that are directly tied to accessing water, such as fetching water and cleaning clothes.⁶⁷ However, even though women have a great interest in participating in water governance, their views are often disregarded in decision-making processes as their position as independent water-users is rarely recognised.⁶⁸ For instance, local people can set up water user organisations in order to govern local water sources.⁶⁹ These organisations can be formally registered under Law No 1 on Non-governmental organisations and societies and may also be informally organised.⁷⁰ These associations, even though aimed at increasing participation of local stakeholders, do not empower women as often their mechanisms and bylaws increase women's dependency.⁷¹

Another vulnerable group is the *El Mohamasheen*⁷² community located in various cities and also in Ta'izz.⁷³ In 2011 the CESCR Committee advised the Yemen Government that:

The Committee calls on the state party to combat the social discrimination and marginalisation faced by the Al-Akhdam people, including through temporary special measures, in line with the Committee's general comment No. 20 on Non-discrimination in Economic, Social and Cultural Rights and to adopt a national action plan for this purpose, drawn up with the participation of Al-Akhdam people and equipped with an effective, participatory and transparent monitoring and implementation mechanism. The Committee also recommends that the planned measures focus on access to employment, adequate conditions of work, enrolment of children in education

65 H Thompson *Landmines and Land Rights in Yemen* (Geneva International Centre for Humanitarian Demining 2010) 6.

66 C Garcia, N Al-syed Hassan and C Vijfhuizen 'Women and water rights in Wadi Tuban, Yemen' (2013) http://www.yemenwater.org/wp-content/uploads/2013/02/Vijfhuizen_Articlewomeninwaditubanfeb07forYemen.pdf.

67 C De Albuquerque, V Roaf 'On the right track: good practices in realising the rights to water and sanitation' (2012) 20 http://www.ohchr.org/Documents/Issues/Water/BookonGoodPractices_en.pdf.

68 Garcia, Al-syed Hassan and Vijfhuizen (n 66) 1.

69 THIGL (n 1) 100.

70 Bruns and Taher (n 42) 1.

71 Garcia, Al-syed Hassan and Vijfhuizen (n 66) 1.

72 Also referred to 'Al-Akhdam', which translates as 'the servants'.

73 United Nations High Commissioner for Human Rights *Report of the High Commissioner on OHCHR's visit to Yemen* (2011).

and prevention of school drop-outs, access to medical care and reduction of child mortality, as well as access to adequate housing, water, sanitation and electricity.⁷⁴

In addition to this group internally displaced persons numbering approximately 400,000 persons in Yemen are also vulnerable to a lack of access to water and are often excluded from participating in water governance.

6.3 Conflicting provisions exacerbate water conflicts

The review of the legal and regulatory framework relating to water shows that the water sector in Yemen has been subject to internal conflict. This led to the assumption that water disputes would also be affected by internal conflict that would, in turn, be exacerbated. The case studies have allowed two conclusions to be drawn. The first has to do with the limited use of formal law. In disputed situations the parties rely mostly on Shari'ah and customary or traditional rules. The codified water law is not applied and there is a lack of awareness about the existence of this law:

The Water Law was modified to stipulate that the water is owned by the general public and is a common resource. The law has been issued and amended but there has been no systematic enforcement. Also protected areas that have been identified for (domestic) water supply have not been enforced. The security situation, powerful landowners and sheikhs have at times stood in the way of enforcement.⁷⁵

The case studies also made it clear that there was not only conflict between the different legal sources but also within the legal sources themselves. For instance, a conflict in the Halhalah Area in Khadeer District⁷⁶ arose when a qat farmer was accused of over-consuming water to irrigate his qat. A family complained that as a result they did not have sufficient water for their personal needs and livelihood and started digging wells near the qat farmer's land and higher up in the valley, which then resulted in a dispute. Each party referred to a different set of traditional rules. The qat farmer relied on the rule that each well owner irrigates the lands of the people whom he considers to be a 'part of him'. With these people he has made a traditional informal agreement and expects his partners in this agreement to remain loyal to him and to not turn to other well owners.

The affected family relied on the rule 'Ala'awal be Al'Awal, meaning that well owners should irrigate the closest farm first and foremost. The district director of the NWRA, however, found another rule to be applicable, namely Alaqrab bel Aqrab where those closest to the water source have priority. This rule also allows for the prioritisation of water for drinking purposes over irrigation. This part of the rule could have worked in favour of the affected family; however, the disputing parties had different understandings of what the traditional rules were.

7 RECOMMENDATIONS

Considering the above-mentioned case studies, the following recommendations were developed. First, when

74 Concluding Observations E/C.12/YEM/CO/2 (CESCR Committee, June 2011) para 8.

75 Meta Meta Research, Pan Yemen Consult *Study on Strategic Orientation and Reorganization of the Irrigation Sector* (2013) 104.

76 THIGL (n 1) 146.

a new law is to be developed, it is highly recommended that the new law is embedded in local values and traditions, especially if the new law is developed in association with donors. This can be done in such a way that those local rules and traditions that support the goal of the new law are being emphasised in order for the community in which the rule is to be implemented to comply. The case studies showed that the Water Law which was developed in 2002 was barely complied with in the relevant communities. Instead the communities follows those rules which were passed down from generation to generation. These rules in certain instances are effective and their influence on formal laws can assist in implementing new laws and tackling current issues. What should be borne in mind, however, is that the customary laws by themselves are incapable of tackling all issues effectively. Therefore, there should be a two-track system, where both formal and informal laws are used to deal with water scarcity.

Secondly, the development of mobile courts applying the law as an independent organ can be highly valuable. At present, many conflicts remain unresolved owing to a lack of capacity and also a lack of trust in the institutions and organisations involved. These mobile courts would, in addition to providing court rulings, also provide education on the applicable law and technical support on water-related issues. This strategy will allow for bridging the traditional laws and formal law. In addition, making an independent organ available for citizens will provide access to courts and justice for those who have, to date, experienced social barriers.

Finally, what this inter-disciplinary research shows is that, in order to tackle water issues sufficiently in Yemen, not only the technical or social aspects but also all of the relevant fields of interest need to be studied so that answers can be provided, guided by the highly relevant influence of power relations on water governance.