

Water and society

Groundbreaking study examines Islamic legal view on water reclamation

New research published by the Water Research Commission (WRC) offers valuable insights into Islamic jurisprudence on wastewater proclamation, reports Jorisna Bonthuys.



In a country with growing water scarcities, the perceptions of local water users about reclaiming waste water is becoming increasingly important. Every drop counts and it will do even more so in the future, especially with increasing demands on resources from different user groups and the emerging realities of climate change.

The idea to reuse and recycle water is also gaining traction in a number of municipalities faced with water resource constraints. Yet many local authorities are not aware of public perceptions around reclaimed water use. What are water users' perceptions about these plans?

In a WRC-funded study – the first of its kind – in-depth analysis was recently conducted into Islamic *fiqh* (jurisprudence) on

water. This refers to the method of discovering legal provisions from specific evidence, in this case from Islamic law or Sharia.

Although the results are of particular interest and relevance to Muslim end-users as well as the municipalities that serve them, it also has relevance for other water user groups in the country, the researchers say.

The need for the research was recognised after a public protest in 2012 following eThekweni (Durban) municipality's controversial toilet-to-tap proposal. The march was largely led by Muslim residents who handed in a petition to the municipality in response to plans to augment its potable water supply with reclaimed wastewater. This was called 'toilet water' by some residents.

At the time the idea of purifying wastewater from KwaMashu and elsewhere and then blending it with conventionally treated water was reportedly considered controversial by local residents. Many Muslim users, in particular, considered it unclean and un-Islamic, and turned to religious jurists and scholars to find out if it was permissible or not.

Social science researcher, Hamed Deedat, an activist and researcher in the water sector, decided to undertake an investigation into the matter. She collaborated with well-known Islamic scholars and academics Prof Abdulkader Ismail Tayob and Azizur Rahman Patel on this study. Prof Tayob holds a Research Chair at the University of Cape Town (in Islam and Religious Values). Deedat, employed at COSATU's research arm called NALEDI, says they wanted to look more closely at the significance of water and water purification in Islam.

The perception of many Muslim users was that reclaimed water is unclean, hold impurities and is therefore impermissible for drinking. This perception was inferred on reclaimed water without ascertaining its potential of being restored to its pure form (or *tahaara*). Since both researchers and local clerics themselves had not investigated this matter, the perception was based on opinion.

Says Deedat, "Rather than looking for a yes or no answer (on water reclamation), we wanted to delve deeper into the ethical, moral and cosmological universes of Islam on the significance of water and water purification. What does Islam say about water purification? Is reclaimed water permissible for potable use in accordance with Islamic jurisprudence and ethics? These were some of the issues we hoped to get clarity on."

The researchers were interested in lessons from the values and practices developed by Muslim jurists on water and water

purification, given contemporary challenges. They also wanted to know how Muslims outside South Africa addressed the question of water reclamation in recent times.

The WRC-funded study consisted of different components, including a literature review of wastewater use and practices in Islamic countries (see sidebar). The researchers prepared preliminary reports looking at water management and reclamation practices elsewhere. These documents were circulated to religious leaders from Cape Town, Johannesburg and Durban for their comments and suggestions. These leaders play a significant role to guide Muslim water users in masjids (mosques) and other community settings around the country. The issues covered in the reports were also discussed at a meeting with ten representatives of religious bodies to deliberate their findings.

The insights gained into Islamic jurisprudence on the subject were "groundbreaking", says Deedat. "The (local) scholars supported the findings that as per jurisprudence indirect potable use is acceptable. While there were some who held a dissenting view, they also supported greater efforts to curb wastage and leaks in water-supply systems at the municipal level." The scholars agreed on the necessity for pure water, and for some process of purification needed for cleansing "ritual" purposes such as ablution (*ghusl*). They also agree that impurities that change the quality of water should be removed and that a high degree of dilution is considered to be a form of purification (as long as the characteristic of the water does not change). They were also generally in agreement that water reclamation met the minimum requirements for the ritual purification. "Reclaimed water from which impurities were completely removed such that the natural qualities of water (taste, smell and sight) were restored, could be used for ablution facilities in mosques," the report states.



Water plays an increasingly important role in the Muslim faith.

Water reclamation in Muslim majority countries

The treatment of wastewater has become a necessity in many Muslim countries. This is evident in a recent report on Islamic jurisprudence and reclaimed water funded WRC. "The availability of resources, and forward planning has put some countries in a lead. But is also clear the demands will be increasing in the next few years, and the treatment of wastewater cannot be postponed any further," the report states. "The threat of water shortage, and particularly water that is suitable for agriculture, and direct human potable use, is as acute as elsewhere in the world."

Water reclamation practices are very common in a number of Muslim majority countries, some already doing it as far back as 1965. This is mostly the case for agricultural purposes. More recently, reclaimed water has become a valued water source for urban irrigation and indirect potable use, the report states. The re-use of municipal wastewater plays an increasing role in meeting water demands.

Within in the Arab world Tunisia, Jordan and the Gulf countries are considered leaders in the area of water reclamation and reuse. These countries all have very limited water resources, acting as catalyst for many innovative water solutions. By 2008, it was reported that wastewater use constituted 10% of Jordan's total water supply with close to 85% of its treated wastewater reused. In Saudi Arabia, the United Arab Emirates, Kuwait, Qatar, Bahrain and Oman about 40% of treated wastewater is used to irrigate non-edible crops and fodder, and for landscaping. In the United Arab Emirates approximately 20% of the wastewater produced in urban areas are being reused.

Most of the Muslim majority countries have so far decided on water reclamation practices on the basis of need, demand and economic viability, explains Hamed Deedat, one of the researchers involved in the WRC study. "It is clear that those countries that face lower rainfall, urbanisation and high population growth face greater challenges in reusing water and reclaiming water."

Water reclamation and purification were not considered prohibited practices as such. The scholars were supportive of the goals of water management and conservation strategies. The purity of water for potable use could not be limited to considerations of purification practices, but had to look at the broader challenge of offering pure water for human consumption. "It was felt that water reclamation was in principle desirable and allowed," the report states.

The scholars also raised concerns about water management in the country. They were concerned about the health risks associated with both wastewater and reclaimed water. Such risks were equally important from the religious ethical principle of removing harm. "More directly, they felt that communities should be directly engaged in better local and municipal practices of



water management. The group also proposed some practical steps to support water recycling in the Muslim community, including at local masjids," explains Deedat.

They felt that greater attempts should be introduced to reduce or eliminate wastage. Currently, an estimated 24% of South Africa's water is wasted through leaks and poor infrastructure. They called upon religious leaders to lead by example and introduce water saving and recycling measures. This included an interesting observation that the requirements for *tahaara* water (fit for ritual purification) was provided by water reclamation.

Islam and water

These conclusions have a direct impact on the assessment of water purification systems in contemporary societies, Deedat explains.

Up to now the use of wastewater in Islamic countries were limited to agriculture and recreational uses and not for the purposes of potable use (see sidebar).

Saudi Arabia is unique among Muslim countries to have a juridical opinion (*fatwā*) from the state's Council of Leading Scholars in 1978 that wastewater purification was permissible for water reuse in agriculture and recreation. Other Islamic countries were making use of wastewater for irrigation (noting the nutrient content of the water) without hesitation.

Furthermore, this *fatwā* was issued before the restrictions pertaining to health risks were brought in by the World Health Organisation and the United Nations' Food and Agriculture Organisation that has required some level of wastewater treatment before use on agriculture, for example, for citrus fruit.

Apart from the citation of this Saudi *fatwā* and a report conducted by the International Development Research Centre in 2001 the literature has been silent on the jurisprudence aspect, offering more focus on perceptions. "Perhaps this is since potable use was not a consideration before, and that technologies to reclaim water to guarantee health safety and purification requirements were non-existent initially," Deedat explains. "Municipalities across the world were also slow on the uptake

of the use or potential use of this technological advancement. Saudi Arabia for example has opted for sea water desalination despite the costs, and has never considered wastewater reuse in this way."

Currently, purification practices dominate the discourse of water in Muslim communities. The main ethical concerns of water use are according to the research related to personal hygiene and state of purity, particularly in relation to prayer, physical and spiritual purification are interlinked. Water occupies pride of place at the beginnings of books of law.

While Muslim jurists have classified water and impurities extensively, the main framework of the juridical tradition was also shaped before industrialization and modern scientific threats. This bears strong relevance today given the levels of pollution and decay of our fresh water resources in South Africa but also globally, the report states.

Yet the Islamic jurisprudence tradition treats water as a precious resource and this is regardless of the abundance or scarcity of the resource and guards against polluting it. As such the juridical foundations seemed to be applicable to modern contaminants that threaten natural water use, the report states. "The basic methods of purification conform to the goals of modern water reclamation and provide a basis of supporting water reclamation for general human use," it says.

Water futures and Muslim users

It is clear that the process of water reclamation as an artificial process complies with the requirements as per Islamic jurisprudence for water being restored from its state of impurity (*tahur*) to a state of purity (*tahara*), the report highlights.

It also emphasizes that water is not a neutral resource, but shaped by cultural and religious values and practices. "The success or failure of water management will not only depend on the implementation of new technologies to a vital and strategic resource," the report states.

Deedat believes this study therefore paves the way for "much needed engagement" around water management issues between municipalities and Muslim end-users. "This research has ramifications beyond South Africa's borders, particularly in parts of Africa and the Middle East as it provides new insights into Islamic jurisprudence on the subject," she says.

The scope of this research should now be expanded to many communities and cultures that share water in the country, she believes. "A detailed map on the cultural value and significance of water would be invaluable for water management in South Africa," she says. "Such projects would support local water management practices. More significantly, they will lead to greater insights on how to enhance water management and water use at a local level."

Similar processes with other distinct water user groups in the country could provide valuable insights that could support and improve democratic water management processes, she believes. This is particularly relevant for municipalities who are considering reclamation as part of their water management

strategy.

The main contribution of this research lies in underlining the religious significance of water not just for Muslims but for all users in the country, Deedat believes. "A bottom-up approach to reuse and reclamation in the local context remains critical for communities to realise their right to clean water," she says.

According to Dr Sudhir Pillay, WRC Research Manager, the research also presented a detailed framework for understanding the ethical and juridical significance of water and its re-use from a religious context. "Further, the study showed that religious leaders could stimulate local communities to improve water management in their area," he says

Deedat believes the reaction from the people of Durban in general, and the Muslims in particular, should be placed in a wider context of water research and the cultural and religious significance of water. "Water resonates deeply in the daily lives of Muslims in South Africa and beyond," she says. Seeing that the project limited itself to solicit the views of religious leaders, future projects should find ways of engaging with end-users of water, Deedat concludes.

"We wanted to delve deeper into the ethical, moral and cosmological universes of Islam on the significance of water and water purification."

Direct or indirect reuse of water

The reuse of water can either be direct or indirect. With indirect re-usage, the treated wastewater is discharged into natural surface or groundwater sources. The water is then abstracted downstream for further treatment prior to it being used for the next process. Indirect reuse of wastewater is commonly used where treated effluent from a wastewater treatment plant is typically discharged into a river. Downstream, a water treatment plant abstracts this water and treats it to potable standards. This is called indirect potable reuse. Direct potable reuse has for instance been implemented in Windhoek (Namibia) since the 1970s. A country like Singapore treats wastewater to potable quality directly as well, but only a small fraction of this water is added into the water distribution system. Despite South Africa being the 30th driest country, it currently reclaims only 4% to 5% of the water it uses.

- To obtain a copy of the report, *Islamic jurisprudence and conditions for acceptability of reclamation of wastewater for potable use by Muslim users* (WRC Report No. 2360/1/15) contact Publications at Tel: (012) 330-0340; Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.