

# WATER FOR REUSE MANAGEMENT FROM HALAL POINT OF VIEW

By

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## ABSTRACT

This study is about the management of water for reuse in Malaysia. The water deficit tends to be more serious even in places which have been believed to be rich in water resources. To cope with these water-related problems, guidelines for water resources development and management are needed taking into consideration the social aspects as well. The difficulties in finding clean water resources for daily necessities such as drinking, washing, or bathing are driving more and more public utilities to reuse wastewater in water shortage regions. But the outbreak of COVID-19, especially the detection of the virus in wastewater evokes the doubts about the reliability of the water for reuse system if not properly managed. The halal issues arise from the ingredients of the reclaimed water, which is still ambiguous, not mentioned by the manufacturers and becomes public concern especially on Muslim in Malaysia. As a solution, the halal-based source is suggested. Therefore, the objective of this study is to investigate the water for reuse system, whichever planned or unplanned, for public utilities from halal point of view. The purpose of this concept paper is to give an insight towards sustainable management of water for reuse through a brief discussion of source wastewater definition, characteristic, practices, and policies from the halal point of view. The expected outcomes of this research are the halal regulations about water for reuse management. The findings of this study will suggest a reference/planning guides for water for reuse from Halal point of view. Besides, this study can also increase the effectiveness of international cooperation between Islamic countries in halal management of water for reuse and Japan which has high technologies for water for reuse.

Key Words: Halal, Water for Reuse, Public Utility, Shariah law, Sustainable Management.

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## INTRODUCTION

An important environmental issue facing the world is the lack of sufficient freshwater resources due to population growth, climate change, and regional drought. Fresh surface and groundwater resources are finite in their ability to provide the clean water resources necessary to support the earth's population. It is becoming increasingly necessary to expand the use of non-conventional water resources such as reclaimed water in water-stressed areas. For water for reuse to grow as a feasible water supply option, technical, environmental, institutional, and socio-economic issues need to be addressed. As for technical aspects, there has been great progress so far, but many socio-economy issues remain unsolved. Some of them are related to historical, cultural, religious, or spiritual issues and halal point of view, among others, seems to be the most representative and influential one.

This paper tries to analyze the basic concept of the halal compliance of water for reuse. This topic is not necessarily addressed to sufficient level even in Muslim countries but should be taken into more consideration along with the economic growth of the society because Muslim people tend to be stricter about their religion as their welfare level goes up. It might be an important issue for Japanese water for reuse industries which are interested in exporting their technologies to Muslim countries.

There are many Muslim countries which have a common halal rule but show some degree of spectrums in detail. This paper focuses on Malaysia when interpreting halal compliance of water for reuse activities. This is because Malaysia is said to be the leader in the world's halal industry. Today, Malaysia is the leading global halal hub with an annual export value of RM35.4 billion for halal products, which contributes approximately 5.1% of the total exports for the country. The Malaysian halal standard is now being widely used by several renowned global multinational companies (MNCs) including Nestlé, Colgate Palmolive and Unilever. Malaysia's halal portfolio has also expanded beyond food and beverage, venturing into various other sectors such as cosmetics, logistics, pharmaceutical and most recently, tourism.

## LITERATURE REVIEW

Water is an essential substance for a human being. In a halal point of view, clean water is an important element particularly in the purification of the human body and life. As a human being, Muslims too drink water for sustaining their life. At this point, consuming lawfully water is a crucial aspect for Muslims. *Sharia*, as Islamic divine rule of law, puts

The halal rules in water for reuse give impact against the confidence of the public in Malaysia especially Muslim people during the phenomenon of coronavirus outbreaks. This study also for the measurement and analysis of halal rule management. How to determine if water for reuse from the halal point of view. However, there is a question of doubt arises among Muslim about the status (purity of water for reuse) from *hukum* perspective whether it could be utilized or not in daily life in Malaysia. Besides Muslim people using the water for drink, cook and daily, they also use it for ablution to pray 5 times every day. The ablution shall use "*mutlak* water not *mustaqmal* water. The water of *Mutlak* is pure and purified water whereby nobody used it before such as rainwater, river water. The water of *Mustaqmal* is not pure and not purified water. The water is already used by another person for any purpose for various uses such as washing water, including faeces water(*Mutanajjis water*).

Generally, human needs hygienic and safe water regardless of religion. The importance of using water in a body shows a sign of water in Malaysia as the water for reuse relates to a public utility. According to *Qawaid fiqh*, management of water is *Maslahah Ammah* which means public interest. In Malaysia besides approval from the state government the water for reuse also need to get approval from authorities such as JAKIM. JAKIM is a government body that governs halal matters in Malaysia. It is different in Malaysia situation; various questions arise among the Muslim community about the status of the water for reuse. What is the element inside the processing, include filter, material and ingredient inside the water for reuse from Halal point of view. Therefore, the propose of this study is to investigate the water for reuse system, whichever planned or unplanned, for public utilities from halal point of view. This research aims to analyze the water for reuse from the halal point of view through journal articles and related *fatwahas* (Sharia rulings) issued by authorized bodies on this matter. It discusses a few fundamental books such as *Tafsir*, *Hadith*, and *Fiqh*, *Usul Fiqh*, *Qawaid Fiqh* in *Sharia law*. It also aims to develop sustainable management of water for reuse. The output of the classification will be a map to new required water for reuse in line with the halal point of view for public utility post-COVID-19

water as a collective property for the people (Wibisono 2013). In terms of ownership, Prophet Muhammad saying: "Muslims have a common share in three things: grass (pasture), water and fire (fuel)" (Abu Dawood 3470). Water is human basic needs, traditionally found easily when needed, abundance in nature and relatively free. However, in this free

market economy, clean water is being traded as an economic commodity. This paper reviewed some aspects from Halal Point of View. According to studies, 70% of the earth's surface is covered with water, but only 2% of this water can be drunk. Referring to Sandra Postel, (1999) Earth is a large water recycling device, moving water between land, sea and atmosphere. No water is lost, it just changes place, quality and shape"-Sandra Postel (Worldwatch Institute, 1999).

Water is also considered as one of the mediums for *taharah* (cleaning) in Islam. Hence, the study attempts to view the water for reuse in halal perspective by stating the methods discussed by previous and today scholars in the *Fiqh books* as well. Among the *Fiqh books* that can be referred to as references to this issue are the book *Mausu'ah Ahkam Taharat Al-Najrasah 'Ayanuhawa Bayan Kayfiyyah Tathiruhawa Al-Taharah Minha*, by Sheikh Umar Diblyan Muhammad Al-Diblyan. The author describes the *Fiqhi method* of how the water contained the *najrasah* (impurities) can be purified. The author states the theory if the water containing unclean desires to be purified, among the methods that can be used is by adding the soil to it and through several other processes. The author also states some other methods that can be used to purify water through the *Fiqh method* in this paper.

Slaughter is a method used to make a halal animal eaten, hence the question of making the dirty water 'halal' to used also requires its method. If water is rated less than *two qullah*, it can be purified by adding more water to it until it reaches or exceeds the rate of *two qullah*. Al-Syirazi (1996) also mentioned this method in his theories which is also quoted in the book *Al-Mu'tamad fil Fiqh Al-Syafie* by Prof. Dr. Muhammad Mustafa Al-Zuhayliyy in the *Taharah* chapter. This method is better known as *Mu'alajah method*. There are rules of *Fiqh (Qawa'id fiqhiah)* to be referred on the aspect of *hukm*. The *hukm* of used treatment water and how the used water to be purified is discussed in the *Fiqh books* in the subject of *Fiqh Ibadah* focused on *Taharah Najrasah's* (cleaning faeces). *Taharah* is a concept of purity, sanitation or hygiene that is clean from the *najrasahhaqiqi* (real faeces) which is impurity (*khath*) or *najrasahhukmi* (*hadath*). *Taharah haqiqiis* purify the body, clothes and the environment from impurity or *najrasah* that can be seen like urine, stool, blood. *Taharah hukmi* is purified from the uncleanliness that cannot be seen such as breaking of wudhu' (ablution) or ghusl (bath). The *Fiqhi methods* related to this water treatment issue is *masalih mursalah* and *dhorurah*. On the other hand, the fatwa issued by the website of the *Islamic Affairs and Waqaf Affairs Department of the United Arab Emirates (UAE)* mentioned in the fatwa number 1191 dated 18 June 2008 that the *mutanajjis water* becomes purify with the abundant water poured upon it until its *najrasah* (impurities) is

disappearing. Water with little *najrasah* in it is considered pure and does not change its condition if the amount of water is much more than the *najrasah*. This statement is seen as more public and like most of the opinions of the other scholars of the school. Then, Naifal Juraydan mentions that there is a clear mention of four major schools's views about water and their understanding of it. He also enlightens in depth the type of water in the *mazhab of Syafie* divided into four parts; the first is pure and purified water (*mutlaq water*). Secondly, pure water can be used only in an emergency or due to lack of water, because the water is too hot (*musyammas*) or too cold, or the water is found from the area that it is punished Lut and Tsamud. The third is the *mustamal* water and the fourth is the *mutanajjis* water. This division of water is explained by its definition in detail by refer to the books such as *Kitab Bada'i 'Sana'i, Al-Muhazzab and Al-Majmu'*. The author also explains the stages in the process of wastewater treatment which is synchronized with the *Fiqh method* and encloses the fatwa issued by the Council of the Great Kingdom of Saudi Arabia which requires the use of chemical wastewater treatment. The fatwa issued by the Council of Muslim Constitution of the Muslim World (1398) also mentioned the necessity of using treated wastewater because it has removed the *najrasah* (faeces) inside it after undergoing purification processes and then removes the smell, colour and taste of the water. The fatwa was issued after a careful study by scientists and scholars to solve the problem of lack of clean water in several countries due to the excessive level of pollution and other factors. The necessity of using these treated wastewaters for purification purposes and other daily use is also quoted on the islamQA.com website. Md Yunus et al (2004) in his study also discussed the status of using NEWater as drinking water and also for domestic use. This treatment water also is used for the ritual purpose such as gusl(bath or cleaning) and wudhu'(ablution). Besides, other studies also discussed water treatment from the ablution usage to be reused for domestic use by (Misbahul et al., 2014) after having a treatment process. This study also revealed the permitting of the reused water after having the treatment process.

Through the reuse of natural water, the earth has reprocessed and reused water for millions of years. However, water for reuse usually refers to projects that use the latest technology to speed up the following natural processes. Although most recycling involves the production of water not for drinking, there are also water recycling projects produced for drinking water in daily use as implemented by Singapore which has processed water for reuse to be used as drinking water. The issue in this study is, what is the status of the purity of the water for reuse from a halal point of view.

## DISCUSSIONS AND FINDING

This section will discuss the management of water for reuse according to the halal point of view. Pure water is never found in nature and it is rare to encounter a source of water that requires no treatment before being used for potable water supply. There are two phases in introducing water treatment; traditional and modern (Chris Binnie et al, 2002). The result of the analysis is discussed based on the research question stated in the introduction. To answer this objective of this study is **to investigate the water for reuse system, whichever planned or unplanned, for public utilities from halal point of view.**

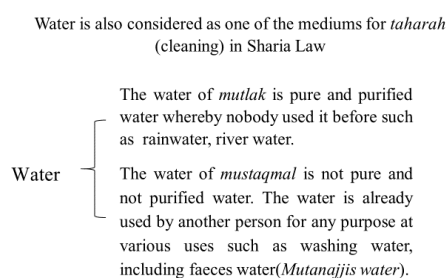


Figure 1: Types of water from Halal of view:

### 1-Definition of Water for Reuse

Water for reuse is wastewater whether water has been used (*Mustaqmal water*) or defiled (*Mutanajjis water*), then this wastewater is recycled through a distillation process. The process of using wastewater that has been processed and treated for more beneficial use. (Syazrey, 2019).

### 2-Types of Water

There is the fundamental of determining the water for reuse from a halal angle which is based on the *fiqh* references. *Fiqh* is part of the knowledge of *Shariah law* which means Understanding. In terms of the definition of *fiqh* is the knowledge of *Sharia* rules (*hukm*) that have to do with the practice of human behaviour. According to references in *jurisprudence*: There are two types of water from *fiqh* of view:

- The water of *Mutlak* is pure and purified water whereby nobody used it before such as rainwater, river water.
- The water of *Mustaqmal* is not pure and not purified water. The water is already used by another person for any purpose for various uses such as washing water, including faeces water (*Mutanajjis water*).

There are two types of *Mustaqmal water* (*Water for re-use*):

- Mustaqmal* without *Mutanajjis* water (water that is not mixed with faeces) for example washing water
- Mustaqmal* with *Mutanajjis* water (Water mixed with Najis) for example urine, faeces.

### 3-Water For Reuse (*Mustaqmal with Mutanajjis water*) Criteria From a Halal Perspective.

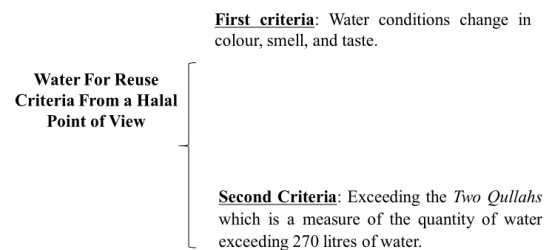


Figure 2: Criteria of water for reuse (*Mustaqmal with Mutanajjis water*).

According to the opinion of Imam al-Nawawi in his book "*Kitab al-Majmu*" stated the criteria to remove faeces from water for reuse (*Mustaqmal with Mutanajjis water*).

**First criteria:** Water conditions change in colour, smell, and taste. *Fiqh* guidelines for the use of unclean water are as follows:

- Change in its own (natural) way that is, with the change of time, sun, or wind.
- Change by adding more water to it.
- Change by removing the faeces from the water.

**Second Criteria:** Exceeding the *Two Qullahs* which is a measure of the quantity of water exceeding 270 litres of water. Measurement of the quantity of water is not less than 270 litres of water. If the quantity of water exceeds 270 litres of water and a lot. The use of such water is allowed (halal) to be used for various uses. According to *Shafi' Scholar*, the water quantity for two (2) *qullah* is equivalent to 270L of water.

Based on the explanation by scholars that contaminated water is mixed with faeces (*Haram*: cannot be used) but can change to (halal: can be used) and is considered purified when it changes naturally or by putting clean water in it or change because it is too time long or affected by sunlight or by wind or air. *Shariah law* sees that the use of water is allowed (*halal*) after recycling and the water will return to its original pure state (*halal*).

This explanation according to the scholar Abd al-Rahman Abd al-Khaliq when explaining the

meaning of the hadith (Water is clean, not unclean on it) narrated by Tarmizi and al-Nasai who explained that the material (molecule) of water is forever pure (this coincides with the scientific discovery that water consists of separate molecules that cannot be mixed by any other molecule). Water will not defecate by itself and will not dissolve with any faecal element mixed with it, but water turns into faeces as it carries faeces. Even if the water affected by the faeces is treated by separating the faeces, then the water becomes pure again and purifies.

Thus, water for reuse is included in the *Mustaqmal* with *Mutanajis* water group. *Mustaqmal* with *Mutanajis* water is water mixed with wastewater such as faeces. and wastewater. According to *fiqh*, the water is *Najis* (*haram*) and forbidden to use or drink. However, *fiqh* criteria have determined the use of water for reuse (*Mustaqmal* with *Mutanajis* water(mutated water)) that can be utilised as mentioned by Al-Syirazi, 1996 that categorized into three theories:

- 1st Theory: The water conditions change on its own naturally (changing of time, sun and wind)
- 2nd Theory: The condition of water when added the pure water to clean up and the *najis* is disappeared from the water.
- 3rd Theory: The condition where the dirty water is washed by soil These theories are based on observation of scholars and *fugaha* to the people around them and according to the situation of that time.

After a detailed study, in consultation with scientists and engineers, the Council of Leading Islamic Scholars (CLIS) in Saudi Arabia concluded in a special fatwa in 1978 that treated wastewater can theoretically be used even for wudu' and drinking, provided that it presents no health risk (Council of Leading Islamic Scholars (CLIS), 1978). The fatwa had issued by Saudi House of Fatwa (Council of Leading Islamic Scholars (CLIS), 1978) regarding wastewater treatment as follows:

*According to the report set by the experts in this regard, a large amount of water would be deemed pure from any impurity if the impurity is removed, if more water is added to it, or if the impurity is eliminated by the passing of time, the sun, the wind, or any other cause that would remove it. Impure water can be purified by using modern filtering techniques that are the best and most efficient methods for purifying water. Many additives are put in impure water to remove impurities, as attested to by water treatment experts. Therefore, the council believes that such water would be completely pure and it may be used for ritual purification and drinking as long as there are no negative consequences*

*on people's health. If it is recommended that water not be drunken, it would be due to reasons of public health and safety and not Islamic law. The council recommends avoiding using treated water for drinking purposes to avoid health problems and also in consideration of the negative public sentiment about this water. However, using this water for the irrigation of crops or park areas is permissible.*

Based on the 1978 fatwa, ablution water at the two holy mosques in Mecca and Medina is recycled for toilet flushing, thus conserving expensive desalinated sea-water (Naser et al., 2001). In fact, with the advancement of water treatment technology nowadays, used water also can be a drink or potable to use after having the water membrane process. This situation is proven by NEWater technology in Singapore.

Furthermore, the use of water for reuse is allowed according to the halal perspective. Referring to Muzakarah fatwa Jakim (2002) and the Mufti of the Islamic Religious Council of Singapore (MUIS, 2001) found that water for reuse is guaranteed to be clean and safe to use, including drinking. It also meets the standards set by the World Health Organization (WHO). Hence, this study revealed the hukm of using water for reuse is permitted because this water is pure and can be purified (*mutlaq* water).

#### 4-Water for Reuse Treatment Process

Phase	Application
Microfiltration	The first treatment process: Named the microfiltration where the wastewater distillation method uses filters that act as microscopic filtering agents. Each filter can filter all waste up to as small as 0.2 microns. This first process using a staged and proven filter can isolate all solid waste up to the smallest particles and remove water turbidity reaching a value of 3-6 NTG to <0.1 NTG this value ensures the quality of the resulting water remains to maintain clogging) while going through the second process which is to contribute in the process of reverse osmosis. This process also isolates bacteria and protozoa.
	The next process after filtration at the MF stage after the water is coated to go through a process called

Reverse Osmosis (RO)	reverses osmosis (RO), sulphate and partly filtration also involve disinfected organic matter, hydrocarbons that have a pesticide odour, etc. This RO process uses a finite 0.0001 micron that can filter 95 per cent of the total soluble solids (TSS) in addition to giving RO also filters viruses.
Ultra-violet light disinfection technologies.	Disinfection with ultraviolet radiation is a supportive process to ensure the eradication of bacteria and viruses even though these bacteria and viruses are acknowledged to have been isolated by reverse osmosis (RO) during the process. Under this process, among others, water for reuse is filtered to filter out particles or fine objects and then exposed to UV light to eliminate bacteria and viruses.

Figure 3: Water for the Reuse treatment process

### 5-Theory-Fiqh In Determining Water for Reuse Policy

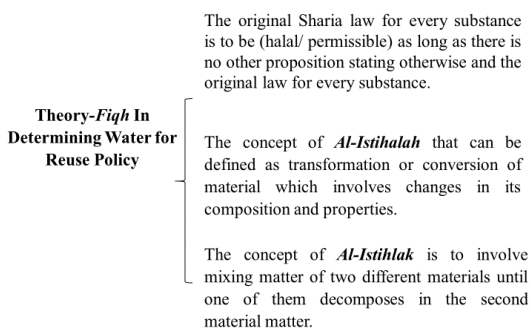


Figure 4: Water for Reuse Policy

*Sharia law* has outlined some general theories specific to the usage of water for reuse. Clearly, explained by the *Qur'an*, *the Sunnah of the Prophet*, *Ijmak*, *al-Qiyas*.

### CONCLUSION

Water shortage is faced in many regions in the world, and the feasibility of water for reuse draws attention for various purposes. Meanwhile, the possibility of water for reuse is rousing concerns over human health, environmental and societal implications of water reuse across the world. The concept and categorization of water for reuse presented in this paper are surprisingly rationale from the scientific point of view, although the

### First Policy: The general theory of *fiqh*

"The original law for every substance (which is useful for example in food, drink, clothing, medicine and so on except in matters related to worship) is to be (halal/ permissible) as long as there is no other proposition stating otherwise and the original law for every substance (Jirim: عَيْنٌ for example animals, plants, food, beverages, medicines, etc.) is pure as long as there is no evidence that condemns it as unclean ". This principle is based on what Allah says in the *Qur'an*:

Meaning: *He (Allah) created for you all that is in the earth (for use in life).*

(Al-Baqarah: 29)

Besides, the scholars also put forward some other basic principles such as "Food must belong to the category of good ingredients (Tayyibat: طَيِّبَات)", "Do not use bad ingredients (Khaba'ith: خَبَائِث)", "Not harmful to health or human life "as well as" It should be taken in moderation and not excessively ".

### Second Policy: Method of *Usul-Fiqh* -

Determining the use of water for reuse through the concept of *Al-Istihalah* that can be defined as transformation or conversion of material which involves changes in its composition and properties. For example, a changing process from halal materials mixed with halal or haram conversion agent which results in halal finished products, for instance, plant fertilized with *najis* until it produces fruits

### Third Policy: Method of *Usul-Fiqh* - Determining

the use of water for reuse through the concept of *Al-Istihlak* is to involve mixing matter of two different materials until one of them decomposes in the second material matter. However, the concept of determining the law from these two methods remains the same where the law (whether pure/halal or najis/haram) to be decided is based on the new properties or features resulting in the final material and not based on the properties or find before this process takes place.

original halal rules were created in very old age when science was not developed so much. This means that halal way of thinking could promote the application of water reuse even in non-Muslim communities as well as Muslim ones. The research on water for reuse from the halal point of view is quite challenging, and we believe it can contribute to human wellness especially in many areas with water scares problems.

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