

## اقتصاديات وأخلاقيات استخدام المياه في المملكة العربية السعودية من منظور إسلامي دكتور/ سعد بن علي الشهراني

ملخص:

المملكة العربية السعودية تمارس الشريعة (القانون الإسلامي) في جميع قضايا الحياة. وتعتبر المياه هي واحدة من الموارد الطبيعية الأكثر أهمية. الماء له قيمة أخلاقية عالية جدا في الثقافة الإسلامية. المياه هي المصدر الرئيسي للنقاء في الشؤون الإسلامية، ويعتبر هدية من الله لهذا الكون، استخدامه له انعكاسات كبيرة عدة. والحق في استخدامها يجب أن يكون عن طريق تنظيم دقيق يتناسب مع أساس قيمته للبشر والحيوانات والنباتات. ومن المثير للاهتمام في البحث هو كيفية استخدام المياه التي تأتي من مصادر مختلفة، مثل المياه الجارية، ومياه الأمطار، والمياه الجوفية.

الآن، هناك مشكلة اقتصادية وبيئية تواجه الحكومة، وهي أن يصبح استنزاف المياه المستخدمة حاليا لأغراض الزراعة، حيث لا يوجد مصدر دائم للمياه. كما أن هنالك عائقا أكبر لقطاع الزراعة في الاقتصاد السعودي هو نقص المياه. وهناك علاقة قوية بين الدين والقضايا الأخلاقية للمياه في المملكة العربية السعودية. الدين هو العامل الرئيسي الذي يؤثر على السلوك الشخصي والثقافة في الدول الإسلامية. والعديد من القضايا المتعلقة بالمياه والتي أدت إلى استكشاف أخلاقيات معينة وأثرت في استخدام المياه وحقوق المياه.

أيضا، يجب أن يكون هناك الرعاية المستدامة للموارد الطبيعية، بما في ذلك المياه، لضمان استخدامها المستمر. وأخيرا، فإن دور الحكومة والأخلاق في تقييم الموارد الطبيعية (المياه) هو المهم حقا في إدارة ومراقبة المياه وفقا للأخلاق الإسلامية.

## Introduction

The Kingdom of Saudi Arabia is the largest country on the Arabian Peninsula, with borders on the Persian Gulf to the east, the Red Sea on the west, Yemen to the south and Iraq to the north. Its lesser borders include the United Arab Emirates (U.A.E.) and Oman to the southeast, and Kuwait and Jordan to the northwest. Saudi Arabia is about one-fifth the size of the United States, with a total area of over 2.5 million square kilometers (SAP, 2008). There are no lakes, rivers, and streams but artesian wells (wells where water flows to the surface naturally) are present in the eastern oases. The only major source of water for human and agricultural consumption is ground water.

Al-Rub Al-Khali (the Empty Quarter) is one of the most famous and largest deserts in the world. This huge desert receives no rain at all. The size of the Al-Rub Al-Khali is close to 250,000 square miles. In contrast, Saudi Arabia is a rich country in terms of some natural resources such as oil, gas, and mineral resources (gold, silver and copper) (YDMCHS).

The map below shows the location of Saudi Arabia in the world. Also, the borders of Saudi Arabia can be seen with the names of the main regions in Saudi Arabia.

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Source: <http://www.worldtravelguide.net/country/244/map/Middle-East/Saudi-Arabia.html>

According to the Food and Agriculture Organization of the United Nations (FAO), «Saudi Arabia falls within the tropical and subtropical desert region». Saudi Arabia has a dry climate because most of the country is desert; it is extremely arid and hot in the summer season and cold in the winter season. Also, the sky of Saudi Arabia is clear of clouds because of the rarity of rain. Thus, there are two main seasons, winter and summer, in most regions of the country. There are no big differences between the seasons in those regions. For example, the capital city of Saudi Arabia (Riyadh) is located in the central area and has a hot and dry climate in the summer, with temperatures over 50 C (122 F), and cold and dry winds in the winter, with temperatures close to freezing, especially at night. In regions that are rich in agriculture and ground water resources, «normal» climates as compared to other countries are evident.

I believe water in Saudi Arabia plays a large role in providing a viable environment for humans and agricultural ecology. However, it is normal to see snow in the mountains for several weeks, especially on high mountains. In fact, some regions of Saudi Arabia are humid in the summer, especially in the eastern and western regions near the Red Sea and the Arabian Gulf.

There are three agencies that handle water issues and management; the Ministry of Agriculture and Water (MAW), the Ministry of Municipalities and Rural Affairs (MOMRA), and the Saline Water Conversion Corporation (SWCC). MAW deals with most of the policies and issues concerning water. MAW makes the national plans for water

and takes care of the agricultural sector issues, including farmers (FAO).

There were approximately 185 water dams of different sizes in 1993 in Saudi Arabia. These dams were built to aggregate storage of ground water and control floods. Bisha's Dam was the last dam that was built several years ago by the government in the south region of Saudi Arabia; the capacity of that dam is almost 325 million m (Rome, 1997).

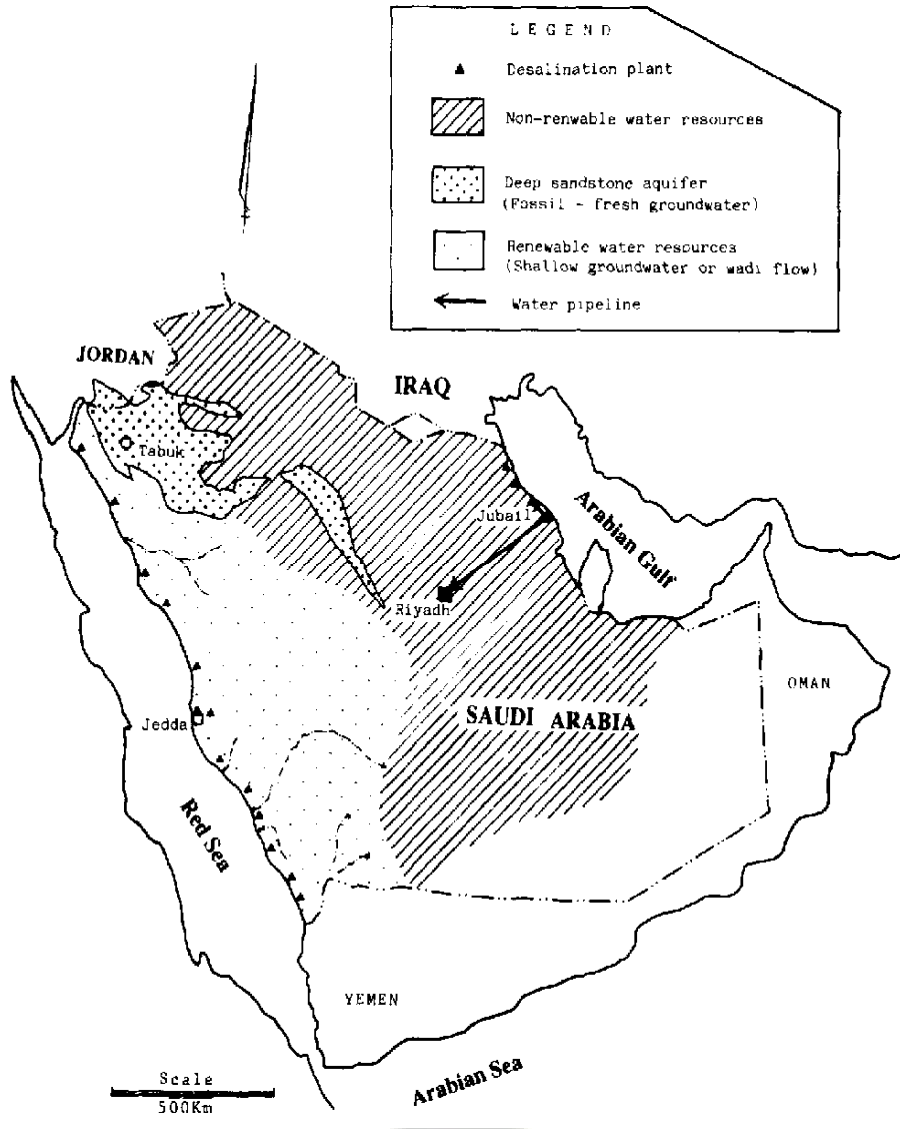
As shown in the map above, there are two seas that Saudi Arabia can use to supply water as a resource for agricultural and human uses, but the process of providing that water costs a great deal and consumes time, especially when there is urgent need. In addition, as sea water is always saline, it is unsuitable for human consumption and the majority of agricultural crops.

One of the main major water supply regulations established by the government is to provide free water to sectors that practice farming in a responsible way. The Ministry of Agriculture and Water initiated a plan for national water use when they saw problems arising. Government officials made some changes, especially in the water supply, in order to avoid any critical problems temporarily, but these changes actually contributed to a continued depletion of water resources. Saudi Arabia has three resources that supply water: surface water (about 10 percent), underground aquifers (more than 80 percent), and desalination plants (5 percent) (Ministry of Agriculture and Water, 1984). Non-renewable groundwater is located

in the northern, north-eastern, and central part of Saudi Arabia. The surface water and renewable groundwater is located in the west and south-west, near the Hijaz and Assir mountains, as shown in Fig. 1.



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Source:  
<http://www.unu.edu/unupress/unupbooks/80858e/80858E08.htm>

Under the government's plan, water was provided to users from non-renewable sources until the country became dangerously threatened because of the depletion of water (Ministry of Planning, 1990). The Ministry of Agriculture and Water then focused on building desalination plants to convert sea water and make that water available on the market to meet with users' demands. The government conducted all of these projects because of its promise to rebuild the agriculture sector in the 1970s and 1980s. Also, it was known that the government conducted these projects to guarantee the availability of food for consumers and to improve the income of rural areas (FAO).

As mentioned previously, the biggest impedance to agriculture in the Saudi economy is lack of water. Also, the whole country is almost dry due to scant availability of rainfall, except in the southwest of the country (Asir Mountains), which is only about three percent of the country. The Asir Mountains have enough rainfall annually to provide a sufficient amount of water to support agriculture needs in that area, which is considered to be one of the major areas for agriculture and farming (Food and Agriculture Organization, 2007). The rest of the country is dependent on irrigation projects to provide the required water for agriculture and farming processes. Groundwater from wells is very useful in the western coast areas, especially in the highlands, in making these areas self-sufficient in water for farming and other industrial production. Also, groundwater helps in other areas such as the central and northern parts of the interior, such as in



Najd and An Nafud, to allow agricultural endeavors in limited situations, but not as much as in the western coast areas.

**Now, there is an economic and environmental problem that the government is facing, which is that the water currently being used for agriculture is becoming depleted, as there is no perennial source of water.** Also, there is competition for water demand between agriculture needs and activities and non-agriculture consumption that also contributes to the supply and demand problem (Ministry of Agriculture and Water). In short, demand for water for both agriculture use and non-agriculture uses is more than the available supply of water.

It has been noticed that water in shallow aquifers has dried up during the last two decades, and the quantity of water has decreased by more than 200m during the same period (Segar, D. A., 1988). In this time period, agricultural harvests have decreased because of the direct relation between water supply and productivity. Also, the depletion of the aquifers has affected the country's financial budget because when a well exceeds a few hundred meters in depth, it costs more to pump the water, and that will affect the value of agriculture production. Farmers have started losing profits, and have often faced a failure of government policies (Segar, D. A., 1988).

Al-Taher and Al-Saleh stated that, «While Saudi Arabia is already by far the largest producer of desalinized water, future development will have to depend even more on the development of this source and on the reuse of

treated wastewater». Also, desalinized water is not useful and does not qualify for most agricultural uses because of its salinity.

### Objective

Beyond its obvious economic and agricultural uses, water has a very high ethical value in Islamic culture. Water is the main source of purity in Islamic disciplines, and is considered as a gift from God to the universe; its use has several significant implications. Water is the most essential substance for life, and the right to use it is highly organized based on its value to humans, animals and plants. It is interesting to research how the water that comes from different sources, such as running water, rain water and ground water, is used.

This paper will focus on water use in Saudi Arabia, which is predominantly a Muslim country. This paper will concentrate on a discussion of the serious problems of recent groundwater exploitation, and will question its sustainability. **In the context of this paper, the researcher will evaluate the current situation of groundwater, and its use and properties, which will take into account some explicit and implicit ethical considerations associated with traditional Islamic society, where the religion plays a dominant role in water's use, distribution and application.**

### **Relationships between religion and ethical issues**

Religion is the main factor that influences personal behavior and culture in Islamic countries. Therefore, all ethics and values are shaped by the way that people understand the religion and its regulations, and the degree of their commitment to follow its disciplines in terms of their practices and ways of life. Thus, to concentrate on water as the main source of life and how people look at it and use it, will provide us with adequate material that will enable the researcher to explore the ethics involved and their influence on water use and rights.

The ethics of using Islamic natural resources is based on Islamic legal foundations. All believers of Islam believe that God (Allah) controls these resources and they were made by him. Thus, in Islam, an acceptance of what is legal and what is ethical has not involved the same processes as in cultures which base their laws on humanistic philosophies. Water is part of the environment and God asks in the Qur'an (the holy book) that we protect the environment in general, and water in particular. There are many ethical and legal reasons to conserve water and environment such as that the environment, including water, was made by God (Allah), and that in order to conserve water and the environment we should preserve its values. Furthermore, the rules of nature are created by God (Allah) and made to be dependent on the absolute continuity of existence, as God (Allah) made a balance in the universe and this balance has to be preserved. The water and environment are not made only to serve the

present people, but also for coming people. In addition, humans are the only ones who are able to protect the environment; no other creatures can do so. God said in Qur'an «Lo! We offered the trust unto the heavens and the earth and the hills, but they shrank from bearing it and were afraid of it. And man assumed it» (Qur'an 33:72).

### **The Sustainable Care of Nature**

The religion of Islam allows the use of natural resources such as water, but this use should not include unnecessary devastation. Also, prodigality is not allowed by God. As God said in the Qur'an, «O Children of Adam! Look to your adornment at every place of worship, and eat and drink, but be not prodigal. Lo! He loveth not the prodigals» (Qur'an 7:31). This tells us that we can use nature by eating and drinking what nature provides, but this use should not be without controls. The components of nature must be protected in order to use them continuously in a sustainable way. Also, this use has to be kept in an altruistic fashion, and not just for giving benefits to human beings. The Prophet Muhammad said in Al-Bukhari's Hadiths: «Act in your life as though you are living forever and act for the Hereafter as if you are dying tomorrow».

Islamic law and ethics establish a beneficent institution in order to formulate strategies throughout the Muslim world. Muslims today may differ in their habits and customs, but they all agree on their faith and in their stance toward life. God said in the Qur'an that «It is He Who sends down rain from the sky: from it you drink and out of it

(grows) the vegetation on which you feed your cattle». This is an open and a clear statement how water should be protected and shared equally between all the creatures in life. That is, both humans and non-humans have the right to water for a number of uses.

### **Value and Water in Islam**

Saudi Arabia is an Islamic country and it is one of the strictest countries in practicing the religion. Thus, the Saudi government applies religion to the regulations of the government in all the aspects of life. The Saudi government follows the principles of Sharia (Islamic Law). All the principles and rules are taken from the Qur'an (the holy book) which contains the principles that all Muslims follow. The traditional culture and religion in Saudi Arabia play a large role in all areas of life, including policies concerning the management of the important resource of water.

There is an argument about the value of water in Islamic Saudi Arabia. In 1992, the management of water was outlined at the UNEP water conference in Dublin, Ireland by agreeing on some principles such as: «Water is a social good; water is an economic good; water management has to be participatory and integrated; and women play a central role in water management» (UNEP). These principles are called *The Dublin Principles*. After that, professionals who thought the principles, as stated, were too general, attempted to make them more specific in ways such as defining «lifeline water tariffs, water conservation, raising tariffs, wastewater reuse, privatization, water

markets, and community-based water management». (Faruqui, Biswas, and Bino, 2001). Other decision makers agreed, but indicated that there should be some conditions. However, Islam disagrees with the above statement since Islam opposes the selling of water because it is everyone's right to have water without priced value; according to the Qur'an, water is from God. Furthermore, wastewater should not be used, because it has lost its cleanliness. Thus, according to the laws of Islam, water is an important resource, but it can not be sold, which is the key argument for Muslims.

Water is a social good and is one of the most important resources in Islam. «It is considered a blessing from God that gives and sustains life, and purifies humankind and the earth» (Faruqui, Biswas, and Bino, 2001). Water in Arabic is called «Ma» and the Qur'an mentions this word sixty three times. Also, the throne of God is mentioned in relation to water. The Qur'an considers water as if it is the most precious creation after humankind. Also, water is the reason of giving life to the earth after death: «Not only does water give life, but every life is itself made of water»; the Qur'an says that «We made from water every living thing» (Qur'an, 21:30). All humans and non-humans depend on water to have a healthy and good life. In addition to that, it is important for Muslims because they use it for Wudu (ablution, that is, washing before prayer) and ghusl (bathing). Also, the Qur'an talks about water and equity, stating that no one can block water from others, and that if someone has extra

water for any type of use, he should share with those who are in need of water (Faruqui, Biswas, and Bino, 2001).

Muslims believe that water is given by God, so everyone has the right to it and no one owns it. However, as Djebbar explains (Kadouri et al), «most Islamic scholars have concluded that individuals or groups have the clear right to use, sell, and recover value-added costs of most categories of water».

Faruqui, Biswas, and Bino claim that «As in Christianity and Judaism, in Islam humankind has the first right to the resources that God has provided for his creation». In Islam, there is a priority of water use rights such as the law of thirst or the right of humans to drink; the right of cattle and household animals; and the right of irrigation (Mallat 1995, p. 129). Thus, Islam made clear rights for the environment as well.

### **The role of the government and ethics in assessing natural resources (water)**

The assessment of the situation of groundwater is a very interesting subject to the Islamic disciplines and the Sharia (Islamic Law). Therefore, exploring how groundwater is currently used will allow us to investigate the role of the government in solving the problem of severe exploitation and will set the stage to come up with potential policies that can be used to correct any harmful situation or practice using the functional ethics included in the Sharia (Islamic Law) and employing them in a constructive way to



solve the problem, or at least to help to lessen the severity of the problem.

The Saudi government practices three types of property rights for water: Private Property, Restricted Private Property, and Public Property (Faruqui, Biswas, and Bino, 2001). The first type is Private Property and includes water in private containers, treatment plants, distribution systems, and reservoirs. The owner of this type of water has the right to sell it, use it, etc. The second type is Restricted Private Property which includes water in lakes, streams, and springs located on private lands. The owner of this type of water has particular rights over others. In addition to that, the owner has certain commitments to that type of water. Within these limits, the owner can use that water and sell it like any other good. The third type is Public Property which water in rivers, lakes, glaciers, aquifers, and seas, and from snow and rainfall. In this case, everyone has the right to that water for drinking or agricultural use, but no one has the right to control it, not even the government, such as selling and trading. In addition to that, the animals, birds, and other non-humans have the right to the public property water, and that is made clear by both the Islamic and governmental rules and laws.

It is known that the practices of distributing and supplying water are almost free. However, with the problems of pollution in water and the shortage of water, the government has started to charge users for the treatment of the water and for delivery services to public and private utilities. Also, charges can be applied by the



government because, as Faruqui, Biswas, and Bino stated, «recovering costs for providing water is allowable in Islam». The Saudi government applied these rules because Muslims believe that it is an essential part of justice among people to treat them equally.

### **Ethical Management of Water in Saudi Arabia**

Abdullah bin 'Umar (one of the Prophet's companions) said, «I heard Allah's Apostle saying, 'All of you are guardians and responsible for your wards and the things under your care. The imam [that is, ruler] is the guardian of his subjects and is responsible for them and a man is the guardian of his family and is responsible for them. A woman is the guardian of her husband's house and is responsible for it. A servant is the guardian of his master's belongings and is responsible for them.' I thought that he also said, 'A man is the guardian of his father's property and is responsible for it. All of you are guardians and responsible for your wards and the things under your care» (Al-Bukhari 2.18). This hadith tells us the government is responsible for providing basic needs such as water for the residents.

Lately, the Saudi government has started to make strict decisions about water management to increase the supply of water to be equal to the demand. The government has begun to take some measures to protect the existence of water, especially the ground water, because it is the only source of water in Saudi Arabia. The decision makers in the government have improved some

rules, regulations, and laws in addition to the Sharia (Islamic Law) in order to decrease the demand of water by residents and to provide other subsidiary sources besides the ground water resource.

According to Islamic law and custom, «water is to be used first for domestic purposes, then for animals, and lastly for agriculture» (Faruqui Biswas, and Bino, 2001). Thus, the government is responsible for providing water for human beings first, then non-humans come after that, and finally agriculture and other uses. In addition, the use of water for industrial and recreational purposes come after making sure the first three categories' demands are met.

### **Ethical Protection and Conservation of Water**

God made it clear in the Qur'an that water is the basis and origin of life. According to the Qur'an, God said that «We made from water every living thing» including humans and non-humans, and we all depend on water in order to survive. In addition to that, water plays a big role in socio-religious issues such as cleaning our bodies and clothes from any type of dirt (Ba Kader, Alsabbagh, Alglénid, and Izzidien, 1983). Furthermore, the Qur'an made it clear by mentioning the functional roles of lakes, seas, and oceans. Also, God said in the Qur'an «It is He who has made the sea of service, that you may eat thereof flesh that is fresh and tender, and that you may bring forth from it ornaments to wear». Also, the Qur'an said that «Lawful to you is the pursuit of water-game and its use for food, for the benefit of yourselves and those who travel».

It is really important to note that protecting and conserving this resource is like protecting and conserving all of life from any destruction or negative effect. God has given the right to all humans and non-humans without any type of monopoly, usurpation, despoilment, wastage, and abuse in order to keep this important resource running and continuous. According to Ba Kader, Alsabbagh, Alglenid, and Izzidien, Allah [God] said in the Qur'an, «And tell them that the water shall be shared between them». Also, the prophet Mohammed in his hadith said that «People are to share in three things: water, pasture, and fire» (Ba Kader, Alsabbagh, Alglenid, and Izzidien, 1983).

In order to have a healthy environment and water resources, we should take responsibility for the following:

1. Improve our knowledge and awareness about the importance of natural resources such as water in order to increase the benefits from these resources;
2. Make sure that we protect natural and environmental resources such as water to keep them healthy;
3. Warn careless people of the illegality of destroying water resources and stealing its rights;
4. Make sure that everyone has the same share that others have in water, and animals as well. (Ba Kader, Alsabbagh, Alglenid, and Izzidien, 1983).

## Conclusion

Saudi Arabia practices Sharia (Islamic law) in all issues of life. Sharia states that water is one of the most important natural resources. Water has a very high ethical value in Islamic culture. Water is the main source of purity in Islamic disciplines, and is considered as a gift from God to the universe; its use has several significant implications. Water is the most essential substance for life, and the right to use it is highly organized based on its value to humans, animals and plants. It is interesting to research how the water that comes from different sources, such as running water, rain water and ground water, is used.

There is a strong relationship between religion and ethical issues of water in Saudi Arabia. Religion is the main factor that influences personal behavior and culture in Islamic countries. Many issues concerning water that have led to exploration of the ethics involved and have influenced water use and water rights. Also, there should be sustainable care of natural resources, including water, to guarantee their continuous use. Finally, the role of the government and ethics in assessing natural resources (water) is really important in managing and controlling water according to Islamic ethics.

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