

Book review: water management in Islam

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Abstract. *The objective of this manuscript is to present a book review of “Water Management in Islam” published by United Nations University Press, International Development Research Centre. The Book was published in the year 2001 when shariah compliance perspective was in its infancy. However, with the rapid growth of shariah compliance in almost every sector of the economy it is very important to review the recommendations of leading scholars in the area of water management as well. The book is the product of findings from a workshop on water management in Islamic world held in Jordan 1998 with the focus to contribute in local and international policies that improve quality and accessibility of water in MENA region. The contributions are towards water demand management, fair water reuse and fair pricing of water. Most valuable contribution of the book is reconciliation between Dublin principles and Islamic principles.*

Keywords: *water management , MENA region, Islamic principles.*

I. Introduction

Climate effect on financial sector is an emerging issue of the decade [1,2]. Regulators around the globe continuously issue warnings about effect of climate change on financial institutions [3]. Addressing the issue China launched a green finance agenda where banks have been encouraged to lend for green financing and to mobilize green deposits [1]. Addressing the same green disclosure and green ratings have also been introduced in China [1]. In early 2019 UK established Climate Financial Risk Forum the purpose of which was to advise financial sector about impact of climate change on financial risks [2].

Impact of financial risks from climate change has been divided into two categories [1]. The first is physical risks which arises when events related to climate and weather occur. For instance, the temperature of the earth is likely to increase of which a forecast of CO₂ emissions has been given in the figure hereunder [3,4]:

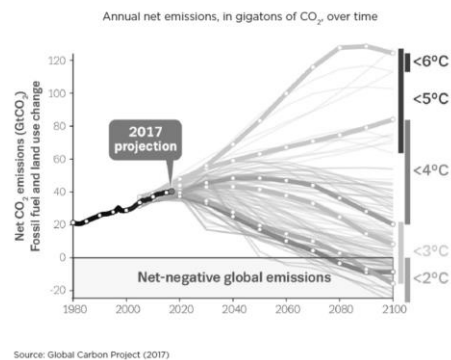


Figure 1. Forecast of CO₂ emission

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This temperature increase is likely to cause irregular heatwaves and precipitations around the globe which will ultimately effect transaction patterns of businesses, economies. Physical risks can be broken down into heatwaves, floods, wildfires, storms, which may also be termed as acute risks; and precipitation, weather variability, rising sea level and temperature increases which may also be termed as chronic risks [5].

The second category of risks which arise from climate change has been termed as Transition Risks, which are actually the risks arising from the “process” while moving towards a lower-carbon economic setting [5]. This risk is important to be considered because change in policies, laws and technologies due to change in climate has the potential to alter valuation of assets and liabilities of financial institutions [6]. It is argued that transition risk has the biggest potential to change the value of assets and liabilities in the short term while the physical risks have potential to effect risk profiles of financial institutions in medium to long term. In the present age there exists need to account for risks of climate change in the risk assessment models. Indonesian firm have begun to realize the importance of carbon disclosure. [7] find that larger firms are very vulnerable to higher pressure from the community and stakeholders, so they have a greater tendency to perform a higher level of carbon emissions disclosure to make the firms seem more legitimate in accordance with norms and values

An assessment of potential effect of climate change on various risks has been explained by [1] and has been reproduced hereunder:

Table 1. Potential effect of climate change

EVENTS/ SHOCKS	EXAMPLES OF IMPACTS	EXAMPLES OF RISK TYPES AFFECTED
More frequent and severe weather events – e.g., storms and floods	<p>Disruption to firms’ own operations and supply chain, as well as to those of their counterparties.</p> <p>Physical damage to real estate and physical assets (affecting collateral value), and heightened risks to infrastructures built in affected regions.</p> <p>Impact on counterparties’ business viability, particularly for those with inadequate insurance.</p> <p>New businesses that offer adaptation tools (e.g., sea defenses) may thrive.</p>	Operational, Credit, Underwriting and Reserving
Rising sea level	Homes and commercial properties in flood prone areas become uninsurable.	Credit, Operational, Underwriting and Reserving
Changes in temperature	<p>Impacts will depend on geography – e.g., mortality rates might fall if colder countries get warmer.</p> <p>Longer term effects on tourism revenues – e.g., skiing resorts season may shorten, and new areas may become tourist attractions.</p>	Credit, Underwriting and Reserving
New laws	<p>Impact will depend on the speed of adjustment required.</p> <p>Costs required for adaptation may make some firms and industry sectors unviable.</p> <p>New firms, without legacy business infrastructure, may be able to gain quick advantages.</p>	Credit, Reputational

Changes in consumer tastes and preferences	Quick changes in consumer preferences, encouraged by social media, could quickly undermine business models. But these can also create opportunities for new players.	Credit, Reputational
Class action and legal cases	Firms seen as contributing to climate change or associated environmental damage may face legal action from companies or jurisdictions that are affected.	Legal, Reputational
Failure to identify and disclose relevant risks	Material risks that were foreseeable but not disclosed will invite the scrutiny of investors, regulators and other stakeholders.	Legal, Regulatory, Reputational

II. Importance of the Topic

With the rise of climate change risk awareness and measures to account for such risk in overall risk estimates there exists also a need to take a shariah review of climate change handling mechanisms being developed. To do the purpose we hereunder present a review of a book titled “Water Management in Islam” that focuses on Islamic perspective on management of water.

III. About the Book

This book is actually a result of a workshop between leading experts on the issue of water resources management in Islam held in Jordan in 1998 under the auspices of International Development Research Centre, International Water Resource Association and Inter-Islamic Network on Water Resources Demand and Management.

It addresses policies on water management from various perspectives such as water conservation, water reuse, water management based on community arrangements and markets of water. This helped participants to derive shariah compliant principles of water resources management. The goal of the workshop was:

“To develop a better understanding of Islamic perspectives relating to selected water management practices and outline research necessary to develop water management policies that will improve the lives of the poor.”

Chapter wise Review of the Book: Water Management in Islam

The **first chapter** of the book discusses water as a social good. It states that water in Islam has so much importance that even the word “shariah” primarily means “the law of water”! Islamic water management principles are very much similar to Christianity and Judaism. However, as Islam started from the region where water is scarce from the very beginning therefore the principles of water management are more detailed than other religions. Important social implications of water management stipulated in the chapter are:

- a. Full cost recovery of water and water treatment services.
- b. Environment has significant water rights and who ever harms the environment due to mismanagement of water can be held responsible by imposing taxes or other charges.
- c. There is no shariah constraint in the reuse of waste water.

The **second chapter** deals with Islamic water management recommendations and the Dublin statement. It states that being a trustee (kufafa) of Allah on earth humans should ensure equitable use of freshwater, which is also the message of Dublin statement on fresh water. It emphasizes participatory governance that also encompasses women to ensure gender equity. There is a need to carry out further researches in the area of economic value of water that can clarify economics of water, rights of water and water value. It requires that there should be equity in the usage of fresh water from all perspectives. There is to say, equity between humans and animals, living and nonliving, development and contemporary etc. To ensure more transparent and equitable utilization of water resources globally it recommends an International Islamic Water Policy that has the power to issue and implement its on fatwas.

Chapter three describes Islamic perspective on management of natural resources with water focus. It states that cultural and religious values of humans are also linked to ecological factors through biological, physiological economic and cultural aspects. It requires that each Islamic country should have its own resources management body complying with shariah principles and local cultural settings. It is because a framework based on harmony between local and international principles is more applicable in any environment than any foreign principles. Islamic perspective of water resource management can be regarded as demand based. In Islam humans are expected to use natural resources for their needs and not to exploit them. Therefore, policy makers should more focus on Islamic principles to ensure better water management. Besides, water policy water management should also be introduced in the curriculum of the school going students. According to Islamic teachings there is no inside and outside view of the world and Muslims should take care of the environment as whole and that too on continuous basis, failing which has severe consequences.

Chapter four of the book deals Islamic teachings about water conservation from user to technological level. It stresses a religious, political, legal and aesthetic solution about it. Water conservation is a basic tool of water resource management that needs to be addressed through awareness and education of the public. This is to be achieved by compiling a database of various experiences around the globe and then implementing an appropriate strategy according to requirement. The issues of conservation, co-operation, preventing harm, and protecting water from solution are need to addressed under the Islamic teachings through domestic lenses. Teachings on water conservations need to be spread from sermons of Imams, education systems and mass media as it is a behavioral phenomenon that requires time to be implemented.

Chapter five describes a case study in Pakistan that used mosques and schools as a medium to promote water conservation according to Islamic teachings. Through various public awareness programs authors established the following conclusions from public awareness:

Mosques and religious schools can play significant roles in spreading awareness amongst masses for conservation of water resources.

- a. Only government rules and regulations are not effective to change behavior of the people towards water management.
- b. Sustainable water management requires long term policies.
- c. There is a need to involve NGO's in water management process which have special skills in this regard.

The long term recommendations for water resources management are as follows:

- a. Water management courses with Islamic viewpoints based on Quran and hadith should be introduced.
- b. Research on Islamic water resources management in institutes of higher education should be introduced.
- c. Government officials and all related should be educated through short courses and workshops.
- d. Students of religious schools should also have courses on Islamic stipulations about water conservations.
- e. Local religious leaders should be encouraged to introduce their own NGOs for water resources management.

f. Model case studies should be conducted and results should be compiled to formulate some overall principles.

Chapter six of the book describes experience of Saudi Arabia in managing its water resources. It describes that Saudi Arabia maintains shariah compliant production, distribution and treatment of water in its kingdom through its ministry of Agriculture and water established in the year 1953, Saline Water Conversion Corporation established in 1965 and Water and Wastewater Authority. The Saudi government has issued several fatwas to ensure shariah compliance of various water management processes. The present shariah compliant water management procedures include; reduction in domestic water demand by introducing water pricing policies which resulted in reducing the demand by 25%. The fatwa for use of recycled water saved millions of acres of water. More over various water management resources have been introduced at farm level to ensure efficient utilization of water.

Chapter seven discusses case study about usage of waste water in Palestine. It states that although the concept of usage of waste water existed even 2000 years ago yet it has developed only recently due to reduction in existing water resources, increase in population, environmental hazards, health issues and disposal of water. Palestine utilized Saudi Fatwa of utilizing effluent for irrigation purpose. Later they tested all crops in the laboratory and found them all consumable by humans. Different surveys on social acceptability of products that have used wastewater produced following results in Palestine:

Survey from general public indicated that people do believe that the effluent based products are allowed in Islam and majority was agreeing to use it as well, however, a significant minority showed less inclination to use such products even allowed in Islam. Over and above the products, a survey was also conducted to examine personal use of such affluent where the people mostly were not ready.

Survey from farmers had very encouraging results as farmers believe that effluent contains natural fertilizer elements that are good from crops.

Chapter eight discussed water rights and trade of water from Islamic perspective. It describes that amongst the components of water demand management which are pricing, regulations, technology and education, pricing is the most used and most controversial component. This is because water dynamics are different not only in rural and urban areas but also in institutions. While discussing water market dynamics the authors found negative elasticities between water price and its demand which meant that water demand can be managed by altering its price. As against the current system of supplying water at subsidized rates it is recommended that at least full pricing of water should be made with supervision to ensure equitable supply of water to the underprivileged.

Chapter nine deals ownership and transfer of water and land in Islam. It talks about historical distribution of water in the region of Arabia and discusses how Islam has ensured equitable distribution of water based on the principles of shariah that waste of water is strictly prohibited and giving it as a charity is highly encouraged. It states that water is a public property according to the teachings of Islam and so its mandatory to follow directions of the state in use of water resources. There is no restriction in Islam on the transfer and trading of water. The state can take any step to take the water away from one area to another and can also make arrangements for its trading in the best interest of the country. Muslim countries actually have fragmented water laws which leads inefficient use of water resources. It also includes lack of laws relating to spread of pollution which is a cause of contaminating existing sources of water. Therefore, there is a need to introduce a strong shariah compliant water management system in Muslim countries.

Chapter ten describes a case study about water pricing in Iran. It states that water reservoir development has to be financed through baitulmal. However, according to Islamic teachings it can be distributed through public private arrangements. It states that provision of public utilities through private arrangements gives rise to creation of monopolies which hampers the spirit of equity according to Islamic teachings. Thus water reservoir and extraction facilities should be

based on state investments however, its distribution should be made in public private partnership if needed. Regarding the pricing of the water it states that the price should cover the cost of providing the water with no discrimination of any sort.

Chapter eleven deals with intersectoral water markets in the middle east. It discusses the practice of overcharging for water in circumstances of shortage of water in certain countries of MENA region, though it is unIslamic. The shortage of water leads to intersectoral transfer of water. Currently, there is a huge need to conduct research on such crops that use lesser quantum of water so that an intersectoral transfer of water can be made from agriculture to other useful sectors in compliance with Islamic principles. This situation raises the need of locating alternating sources of water that includes use of effluents in accordance with shariah across the countries as well. A guidance in this regard can be taken from the countries which have already implemented such systems and implemented fatwas for instance Saudi Arabia. There is also a need to introduce regulated markets where governments identify areas in the countries which have excess water buys such water at a reasonable price and later sells to the areas where water shortage exists.

Chapter twelve of the book provides comparison between international and Islamic laws that deal with management of the shared water. By the term shared water they meant water resources that lie underneath and across the borders of two or more countries. Management of such shared waters is based upon many factors such as international laws, laws of the two or more relevant countries, existing and institutional frameworks, existing and future resources of water and their use mechanisms, conditions of the climate and the water availability itself. This chapter tries to evaluate current water management practices keeping in view current international best practices, theories and theoretical frameworks. Though if we consider the water management in international contexts, no one law is applicable in any circumstances. It is generally regarded that there is no universally definition of equity when it comes to international laws. It is because each water resource has its own uniqueness with respect to hydrologic, institutional, legal and practical aspects. Therefore, no specific rules can be made more practical unless we introduce flexibilities. Though the nature of each water reservoir and procedure to handle if different but over the period of time most of the water disputes relate to upstream and downstream of water.

Keeping in view the nature and gravity of the issue there is a need to define and develop new compound of international water management laws which are more in compliance with shariah principles. Such laws should account for amongst other issues the issue of reasonable share, consulting, public interest and preserving the public interest, equity and most of all ecosystems. Having said that an important element in all this process is relevant Islamic literature on shared water resources, therefore there is a need to conduct an in depth inquiry into the Islamic literature in this regard as well. Initially, it is recommended that a workshop should be organized consisting of Islamic and water management scholars that can formulate guiding principles about shared water resources management.

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