K. V. Raju · S. Manasi Editors

Water and Scriptures

Ancient Roots for Sustainable Development



Water and Scriptures

K.V. Raju • S. Manasi

Water and Scriptures

Ancient Roots for Sustainable Development



Editors K.V. Raju Policy and Impact Asia Regional Program International Crops Research Institute for the Semi-Arid Tropics Hyderabad, Telangana, India

S. Manasi Centre for Research in Urban Affairs Institute for Social and Economic Change (ISEC) Bengaluru, Karnataka, India

ISBN 978-3-319-50561-9 DOI 10.1007/978-3-319-50562-6 ISBN 978-3-319-50562-6 (eBook)

Library of Congress Control Number: 2017932533

© Springer International Publishing AG 2017

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Printed on acid-free paper

This Springer imprint is published by Springer Nature The registered company is Springer International Publishing AG

The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

Cultures change over time all over the world; however, it is important to see how we adapt to cultural changes while meeting the needs of our society without affecting environmental sustenance. Several experts have emphasized the role of culture in protecting the environment. We mulled over this thought and believed that consolidation of traditional knowledge and its understanding will go a long way in improving the current environmental challenges besides aiding in environmental rehabilitation, conservation and improved resource management. Culture and religion are often interlinked. Also, water and culture are strongly interlinked. Water is a vital source of life and culture determines a person's way of life. Keeping this in perspective, since ancient scriptures often highlight the importance of a harmonious coexistence between human beings and nature, we have attempted to draw lessons from the scriptures of three religions, Islam, Christianity and Hinduism, for water in specific. We plan to extend this framework to other prominent religions like Judaism, Buddhism, Zoroastrianism and Shinto, and also to other natural resources in future years.

There are several studies related to scriptures across religions and their perceptions regarding ecological conservation. However, religious studies and their socioeconomic and environmental relevance to society, more specifically to the current policy contexts, are limited. This study attempts to bridge this gap. Given this setting, the focus was to explore how water was conceptualized, conserved and managed in scriptures, and to understand the historical, functional and futuristic perspectives of water resources management to develop policy guidelines. The book will be useful for historians and research scholars studying water sharing and the place of water in different cultures as well as ecologists and environmental scientists. The chapters provide messages from religious scriptures and their relevance for sustainable water resources management in Islam, Christianity and Hinduism. Legal perspectives are spread across all the scripture-based chapters, followed by a comparative overview across religious scriptures and policy perspectives. We involved scholars from respective religions well versed in the ancient scriptures in writing this book.

We are thankful to the Institute for Social and Economic Change, Bengaluru, for giving us the opportunity to carry out the study. Also, we are extremely thankful to all authors, reviewers, scripture experts, and colleagues who have extended support and contributions all throughout the study. Several deliberations with subject experts and scholars were held during the consultative workshops held at the research and study centres of Islamic, Christian and Hindu religions and a seminar was held before finalization. We remain indebted to all of them.

Hyderabad, TS, India Bengaluru, KA, India K.V. Raju S. Manasi

Contents

Water and Scriptures: An Introduction K.V. Raju and S. Manasi	1
Water in Islam M.A. Siraj and M.A.K. Tayab	15
Perspectives on Water and the Bible Y. Moses	59
Water in Hindu Scriptures: Thank You, Water! Sudhakara Sharma and M.S. Shruthi	89
The Legal Lore of Water Ecology and Scriptures Manjeri Subin Sunder Raj	173
Water in Scriptures: A Comparative Overview K.V. Raju, S. Manasi, Abdul Aziz, M.K. Ramesh, and M.S. Shruthi	219
Policy Perspectives: Water and Scriptures A. Ravindra, K.V. Raju, and S. Manasi	247
Index	269

Water and Scriptures: An Introduction

K.V. Raju and S. Manasi

Introduction

Across the world, various cultures and their practices have influenced, for thousands of years, the way people perceive and practice the use and abuse of natural resources. Relations between people and their environments are embedded in culture (Schelwald-van der Kley and Reijerkert 2009). 'Cultures' change over time all over the world; however, it is important to see how we adapt to cultural changes while meeting the needs of our society without affecting the environmental sustenance. While an emphasis on a wide variety of ethical principles is seen as a means to promote the cause of environment, the acceptable options available to people depend on the cultural contexts of the societies concerned. Ethical concerns are seen as part of a cultural evolution of people, including environmental ethics (Nadkarni 2011). For instance, the ancient scriptures often emphasize the importance of a harmonious coexistence between human beings and nature. 'Do strengthen me. May all beings regard me with eyes of a friend. May I regard all beings with the eyes of a friend. With the eyes of a friend do we regard one another'. YV 36.18 (Sharma 2000). Moses (refer Chapter 2.2.3), drawing from the Bible, indicates that in the Bible, the word of God and water are considered important for life, compares the word of God with 'rain'. The believer is called to accept the word and water, cherish, respect and honour them both as the gifts of God upon freely bestowed. Water becomes a symbol for the outpouring of God's spirit and blessing. God "will pour water on the thirsty land and streams on the dry ground," Isaiah 44, 3. Similarly, Siraj and Tayab

K.V. Raju (🖂)

S. Manasi

Policy and Impact, Asia Regional Program, International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India

Centre for Research in Urban Affairs, Institute for Social and Economic Change (ISEC), Bengaluru, India e-mail: manasi@isec.ac.in

[©] Springer International Publishing AG 2017 K.V. Raju, S. Manasi (eds.), *Water and Scriptures*, DOI 10.1007/978-3-319-50562-6_1

(refer Chapter 2.1) draws from the Quran that asks us not to waste (water, food, etc.). It states ... 'But waste not by excess for God loves not the wasters' 6:141. All this signifies the cultural significance and as rightly pointed out by Alveré (2012) highlighting different key characteristics of culture and explains how culture manifests itself at different stages in life, affects the behavioural pattern of people and its interpretation and influences biological processes as well. Currently, natural resources management is planned in isolation resulting in piecemeal approaches. Cultural aspects that play an important role affecting behavioural patterns are not included, thus making sustainable management of resources a futile exercise in several situations.

In the recent decades, the climate change challenge encountered is a serious concern across the globe. Several national and international efforts are intended towards combating the effects of climate change. Climate variations have always been witnessed with natural influences, however, lately; there are strong evidences that human actions are main drivers of the recent increase in global temperatures that affect precipitation patterns and extreme weather events. The fifth Intergovernmental Panel on Climate Change (IPCC) report states with 95% confidence that humans are the main cause of the current global warming. According to NASA and NOAA data, 2015 was the hottest year and since 1992, almost every year has been indicating an increasing trend. Water, agriculture, energy and climate change are all related, and their harmony is important for sustainable development. With growing disharmony across these sectors, earth will be facing grave consequences.

The present threats of climate change are widely discussed in the context of bringing about a collective behavioural change. Based on American Psychological Association's report on Climate Change, an interface between Psychology and Global Climate Change points out ways psychology can aid people adopt more environmentally friendly behaviour and ways to incorporate it into policy and behavioural research to strengthen environmental laws and regulations (Price 2009). There is a broad consensus that global warming is caused due to anthropogenic factors and will continue if greenhouse gas emissions are not radically reduced. Several initiatives in resource management, technological interventions, economic initiatives, law and regulations, financing environmental challenges and several other approaches have not been able to completely resolve the crisis. This brings us to the stage wherein there is need for more than just business-as-usual solutions mentioned above.

All this brings to the fore the need to explore a holistic stewardship approach to seeking effective solutions to mitigate environmental challenges. It would be useful to understand the key changes in existing value systems, cultural practices and mindsets. There is still lack of proper understanding about the causes of anthropogenic factors on environment from the cultural perspectives on the problems that are prevailing in current contexts and what religion has got to offer to bring about the needed change. Based on the learnings from scriptures, we intend to evolve policy options for basing natural resources management that is inclusive of cultural understanding and contexts so that cultural techniques may be included in addressing current challenges. To begin with, we will focus on 'water' the critical element for sustainer of life since it is one of the resources that is under serious threat paving the

world towards severe water crisis. According to the United Nations (2006), water use has grown more than twice the rate of population increase in the last century. By 2025, an estimated 1.8 billion people will live in areas plagued by water scarcity, with two-third of the world's population living in water-stressed regions resulting from use, growth and climate change.

Peter Gleick in his article State of the Planet says, 'The most serious unresolved water problem is the continued failure to meet the basic human need for water'. Thus, water resources management demands a holistic approach across the globe, given the fact that water knows no boundaries. Water has several functions— economic, ecological, societal and spiritual. Hence, water management needs to be sustainable. Schelwald-van der Kley and Reijerkert (2009) argue that water plays a fundamental role in the life of societies; it has a strong cultural dimension and no sustainable solutions can be found by omitting this dimension. They stress that intimate relationship between water and people should be considered during decision-making processes. The way water is conceived, valued, understood, managed, used or abused, worshipped or desecrated are all influenced by the cultures. We too see the immense scope for integrating the cultural dimension, however; we will focus specifically to 'water' in 'religious scriptures'. We see that wise management of water based on the spiritual principles of justice and equity integrating other disciplines and stakeholders would play an important role in sustainable water use.

As per the UNESCO report (2003), 'Water is probably the only natural resource to touch all aspects of human civilization—from agricultural and industrial development to the cultural and religious values embedded in society. The need and demand for water have been a driving force for health, for society, for economic prosperity, for cultural significance and development throughout human history'. Cultural differences play a key role in the way water is perceived, valued and managed in different societies. All views on water are linked to its fundamental functions and its relevance to life. The fact that water is necessary for survival makes it a key part of culture. Moreover, all major civilizations developed around large sources of water and mostly around sources of freshwater.

The significance of water and scriptures in a nutshell describes water as a physical substance, a biological necessity, an intrinsic part of people's identities, cultures, religious perceptions of themselves and the Otherworld or the life thereafter. Water in its many facets matters for humans, while the social, cultural, ideological and religious roles of water include deep ontological relations and identities ranging from personal perceptions and gender relations to rainmaking and fertility rites for the benefit of the whole society as well as perceptions of cosmological realms and religious beliefs (Oestigaard 2009).

Drawing from the messages across the World Water Day conferences held by the UNESCO, several dimensions depicting the inter-linkages between water and culture were highlighted. It emphasizes the relevance of culture in protecting water resources. The universal declaration of the 2002 Paris World Water Day stresses that water and culture are intertwined, hence, '*Promote understanding that Water and Culture are inseparable elements of human life. Culture should be regarded as the permanently evolving set of distinctive spiritual, material, intellectual and emo-*

tional features of society or a social group. It encompasses—in addition to art and literature, lifestyles, ways of living together, value systems, traditions and beliefs (UNESCO Universal Declaration on Cultural Diversity, UNESCO, Paris 2002)', as a follow-up of this, a key message at the World Water Forum (2003) held at Japan, highlighted water's cultural importance for sustainable management thus, 'Due to its fundamental role in society's life, water has a strong cultural dimension. Without understanding and considering the cultural aspects of our water problems, no sustainable solution can be found'—Session—Water and Cultural Diversity, Statement to the Ministerial Conference, 3rd World Water Forum, 22 March 2003. The World Water Day (WWD) (2006) also focused on the theme 'Water and Culture' under the leadership of the UNESCO. Several messages brought out in a summation focused on 'promoting inclusive and solution oriented water governance and encouraging artistic expressions on water issues for creating awareness, understanding and sharing information'.

Another interesting initiative relates to the recommendation made about the need for a '*Water Ethics Charter*' at the 2012 World Water Forum in Marseille in the session, 'Towards Ethical and Spiritual Approach to Water'. Several organizations worked in collaboration to develop a declaration prescribing a set of ethical principles to guide decisions on water use and water ecosystem management. The Charter was presented at the World Water Forum in South Korea in March 2015.

Water, Culture and Religion

Culture and religion are often interlinked. Also, water and culture are also strongly interlinked. Water is a vital source of life and culture determines a person's 'way of life'. This is inclusive of the way people manage their water resources, given the environment they live in and the way they adapt to it. Indigenous cultures are known even to this day for their sustainable water practices. For instance, in many traditional cultures, water is linked to people's identity, if anyone destroys their water resource it amounts to depriving them of their cultural identity. Similarly, in few other cultures, water has an important social function, particularly for women. Most often, modern practices have disturbed these traditional practices resulting in negative implications. However in some cases, there has been revival of old traditions for natural and sustainable water use. For instance, traditional Karez and Qanat systems found in arid countries like Afghanistan and Pakistan are currently being restored to use. These systems are owned and operated by the local community where the irrigation channels built underground brings water from the mountains to the villages, preventing evaporation losses. Thus, sustainable water management has been a practice that cuts across cultures where there prevails a delicate balance between water resources and human society (Schelwald-van der Kley and Reijerkert 2009).

From the religions front, Elaide argues that religious phenomena will only be recognized as such if it is grasped at its own level, hence, to be studied as something religious. This is due to the fact that grasping the essence of such a phenomenon through physiology, psychology, sociology, economics, linguistics, art or any other study would remain untrue as it misses the most unique element—'sacred'. Obviously, there are no purely religious phenomena, so phenomena can be solely and extremely religious because religion is human; she discusses by studying an account of certain cosmic hierophanies like the 'sacred' revealed at different cosmic levels—sky, water, earth, stones. For instance, water and the seeds of things, water symbolizes the whole of potentiality. In Sumerian, water means 'sperm, conception, generation', in Mesopotamian carvings, the symbol fish and water are seen as emblems of fertility, while in China, the dragon—an emblem of sky and water was constantly associated with the emperor, who represented the rhythms of the cosmos and conferred fecundity on the earth (Elaide 1996).

Besides this, the ancient scriptures across religions have related literature that have described the nature of these resources and guiding people for centuries, i.e. the way people should treat these resources which are part of their daily life and rituals being practised. As observed by Nadkarni (2011), 'reverence for nature was not confined to preaching in the scriptures and texts, but was part and parcel of their traditional culture'. The Vedas, Upanishads, Puranas, Epics and scholarly writings such as 'Mayurchitraka' and 'Brihat Samhita' are vast treasure troves of scientific and environmental knowledge. The ancient scriptures, particularly the Vedic literature stresses maintaining the importance of natural resources. Protection of environment is articulated through informal rules in the form of traditions/daily rituals/prayers along with compassion towards all forms of life with a particular emphasis on human well-being wherein pious actions would result in nature's blessings, (the earth-mother and the atmosphere above—father would protect and provide one with a long and peaceful life) while erroneous actions could harm nature and its functions (Nair 2003). Water is considered an inspiration since centuries and people have deep rooted spiritual and religious values and strong faith that unite them and sustain them. Cultural views on water resource management are largely based on the main religious views of the region. Water holds a fundamental place in most religious beliefs, values and rituals. Indigenous spiritual and religious beliefs hold a profound reverence for water, and the customary way of life does offer an exemplar for a sustainable way of life. Therefore, dialogues with reference to water resources management in religion become applicable for discussions relating to water resources management in culture.

Among these, water plays an important role not only in five major religions of the world, but also almost every recognized religion in history. Animism, Judaism, Taoism, Baha'is, religions have all emphasized on the respect to water. In Animism, indigenous people have honoured and respected water as sacred, hence, the traditional knowledge, their laws have made them feel responsible for protecting water as it connects all forms of life. In Buddhism, water symbolizes purity, clarity and calmness. Judaism considers water as an important component for ritual cleansing practices. Taoism sees water as the essence of nature and a model for human conduct. Baha'is religion believes that water management as the notion of unity between all people and the interconnectedness of things. Similarly, Hinduism considers water as divine besides a cleanser of sins, Christianity sees water as purifier and much more, while Islam also sees water as life and a gift from God (Schelwald-van der Kley and Reijerkert 2009). The rituals and beliefs across religions vary, but there are consistent views on water with regard to the foundation of most religions and the natural significance of water. Most religions are based on a set of morals about 'what is right and what is wrong' and most of them view doing wrong things as being 'impure'. As water cleans and purifies, many religions have beliefs and rituals that associate water with the power of cleaning us of our sins or moral impurities (Stewart 2008). 'Rebirth' and 'Purification' are the two main symbolic qualities of water that have made it sacred in the religious ceremonies. In rituals, water confers 'new birth' in magic rituals it heals and funeral rites it assures rebirth after death. Because it incorporates in itself all potentiality, water becomes a symbol of life (living water) rich in seeds it fertilizes (Schelwald-van der Kley and Reijerkert 2009).

Therefore, perceptions about religious and non-religious beliefs of water are critical to proficiently deal with water management issues. Religious wisdom would thus impart wise water management by connecting values and behaviour that would uphold sustainable water management. It would be useful to find the precise blend between the old and modern practices that would aid in sustainable solutions to cope with the current water challenges.

Background and Process

We have been working on this theme since 2011,¹ and this study was taken up to further strengthen the work with the support from scholars well versed in the ancient scriptures. We felt a consolidation of traditional knowledge and its understanding will go a long way in improving the current environmental challenges besides aiding in environmental rehabilitation, conservation, and improved resource management. Examining social value systems and the changing water environments and their impacts on traditions and cultural values are important to comprehending cultural changes in a historical perspective. It is important that we include culture-based learnings for developing cultural models as an important component to achieving sustainable development. Innovative and specific technological interventions have also evolved as a good alternative in the recent times. For instance, in Delhi, 'Temple machine' is used at few temples to make 'holy compost' out of the temple waste generated and is being sold to devotees which is an interesting initiative, thus reducing the waste dumping into the river Yamuna. Ganesha idols made from clay implanted with plant seeds, thus, every Ganesha idol when immersed methodically turns into a plant. Several such examples can be adopted and scaled up.

There are several studies related to scriptures across religions and their perceptions regarding ecological conservation. However, religious studies and their socioeconomic and environmental relevance to society, more specifically to the current policy contexts, are limited. Scholarly writings on the subject have, in the past, invariably, glorified the 'golden past' or vilified it as being dogma ridden and unscientific.

¹In the Center for Ecological Economics and Natural Resources of the Institute for Social and Economic Change, Bengaluru, India.

Contemporary writings have made fleeting references to the contributions of the past to the present prevailing structure, scheme and form of Water Governance. The Indian Law Institute had, in 1990s, published two scholarly works on Water Law and Governance ('Water Rights and Principles of Water Resources Management', 1991 and 'Water Law in India', 1992, both edited by Chhatrapati Singh) and the recent publication on 'Water and the Law' (edited by RamaswamyIyer, 2009). These are, perhaps, the significant works to have devoted some space to reflecting on the Past Practices on Water Management, but only in general and among many other aspects of concern. Efforts in one sweep, in carrying out a detailed analysis of the customs, traditions and practices across religions (besides the legal ordering on Water in the pre-independence era) and their continued relevance to the present context have hardly been attempted. 'Water and Scriptures', in this respect, appears to have made a significant effort in that direction. There is significant effort made in recounting the past practices, frequently referred to in different religion's religious scriptures and cultural orientations, in a structured manner and connecting them to the present system of water management, in India as learning lessons from the past to effectively address the challenges of the present and future. Given this contexts, our specific aim focused on drawing lessons and apply indigenous knowledge, wisdom and cultural traditions to suit the policy context describing the role of individuals, communities and the state to ensure an effective natural resources management, in this context, water. 'Traditional Practices' threw up the question, 'Tradition, in relation to which modern practice?' as different cultures and traditions slipped into modern times at different points of time, in history. It was then proposed that the research would attempt to look into as many earlier traditions as possible to narrow the focus of enquiry, to the extraction of the theoretical foundations and principles of water governance, in a comparative context globally and elaborate on developments in India, till its independence from the alien rule. As regards India, in particular, it was decided on the cut-off period for the study to include the developments during the Mughal period and the influence of the colonial masters—the British—up to Indian independence.

Given this setting, the focus of this study was: (a) to explore how water were conceptualized in scriptures, civilizations and through dynastic rules to conserve and manage water resources; (b) to understand the historical, functional and futuristic perspectives of water resources management; (c) to draw lessons and evolve policy guidelines.

Process

First Phase

We initiated small studies in a phased manner. To begin with, three papers were taken up for obtaining a holistic view of 'water' in particular Heritage view in India:

- Water and Islamic records
- · Water and Biblical records

- Water and Hindu Scriptures
- Water and Law (cuts across all three religious scriptures)

We plan to extend this framework to other prominent religions like Judaism, Buddhism, Zoroastrianism and Shinto in future years. We admit that identifying experts and the process of understanding the expectations that we have from them to suit the framework developed has been a challenging task, so far.

The studies taken up provide an overview of water resources management over time besides attempting to understand the values that the ancient texts and scriptures have laid down with regard to water resources management in specific, further detailing out challenges in water resources management in the current context and suggesting future options for improved water resources management. At a later phase, the focus will be on a comparative study of the cultural practices and their relevance to the present society and policy contexts.

Content Framework

A detailed content framework was developed and circulated to the specific paper writers. The content frame was developed based on an earlier paper, "Water— A Heritage View",² where we worked at length on water perceived in its various cultural forms and traditions and related aspects, in addition to reviewing the literature and discussions with experts and our current experiences in the arena of water resources management. We would like to highlight in the current study that culture, which is largely routed through our rituals/practices has a great influence—positive and negative on the challenges encountered in the current context; hence, it is important to analyse the cultural dimension, its relevance and implications to bring about the needed change.

Several instances can be adopted even to this day, for instance, the positives of traditional water quality technologies—practically useful and simple—such as using alum for water purification and sand filters for bringing about a significant change in the water quality. Similarly, it is important to analyse the implications that in materials used in making Ganesha and Durga idols hold for contamination of water bodies, thus, highlighting the need for regulation by providing factual information and creating awareness among the populace, of course, keeping in view the religious sentiments involved in celebrating these festivals. Nadkarni (2011) in his article on Culture and Environment, argues that culture influences our attitudes and behaviour and that it can also be used as a resource to promoting environmentally benign attitudes. Being not rigid, culture can evolve and respond to changes that newer problems bring in their wake. In situations where culture is not initially benign towards environment, leaders of thought should play a role in bringing about

²Published under the working paper series of the Development Foundation, Bengaluru (Manasi. S and K. V. Raju).

the action as they have insights into the future. Largely, all indigenous people's attitudes are oriented towards sustainable use of natural resources. Besides, industrialization is seen as one of the major causes underlying the promotion of philosophy of private profit maximization as well as freedom for the market, which tend to disrupt the cultural traditions. With knowledge about the cause of these problems, culture and ethics can evolve towards facing new challenges posed to the environment.

The content frame comprises several sections like—reverence to water in ancient texts, benefits from water, conservation and promotion practices, water purification practices, water festivals, technologies in water management, water use and management in ancient Indian civilizations and so on. In the current context, it covers the status and key concerns in water management—use and abuse in view of cultural practices, pollution, water access, inefficient use, water markets and as a futuristic context, the lessons to be drawn for sustainable practices in water management. Besides, we also held several informal meetings to refine the framework content.

The research universe on water and law evolved to closely align with and complement the design commonly worked for the other three papers on Hinduism, Islam and Bible. The layout for the legal enquiry was specifically required to cover during the said period, (a) legal conceptualization and characterization of water; (b) issues of rights, responsibilities, need, entitlements, livelihood, commerce, prioritization of use, etc.; (c) principles of governance—polluter pays, precaution, conservation, sustainable use, public trust, equity, etc. and strategies for augmentation, improvement of quality and protection; (d) administrative architecture, with roles and responsibilities at different levels and layers of governance and among different players; (e) mechanisms for dealing with deviance of prescriptions and penal sanctions; (f) grievance redressal and conflict-resolution mechanisms; (g) devises for relating, integrating and harmonizing water governance with the governance of other aspects of natural resources management (land, forest, etc.); (h) comparison between and evaluation of different legal systems and governance and (i) identification of the good prescriptions and practices of the past and the extent and nature of the survival of such content in the current situation.

Progress Review

We had constituted a review committee consisting³ who were part of the whole process from the time of initiation providing valuable feedback on the papers and refining the process as well. Discussions were held with the experts in the respective religion. We circulated a draft framework prior to holding the meetings.

³(a) Prof. Abdul Aziz, ICSSR Professor, National Law School of India University, formerly, Professor at the Institute for Social and Economic Change, Bengaluru; (b) Prof. M.K. Ramesh, Professor, National Law School of India University; (c) Prof. R. S. Deshpande, ICSSR Rajiv Gandhi National Fellow, Former Director, Institute for Social and Economic Change, Bengaluru.

The purpose was to ensure central focus, quality and improvements in the papers based on debates and discussions. The First Group Meeting was held in the Centre for Islamic Studies. Fifteen resource persons, well versed in Islamic scriptures— Quran and the Hafiz—participated actively providing valuable information to the paper writers. The Second Group Meeting was held at the Christian Association with eight resource persons participated in the meeting and providing inputs related to Bible, Old Testament and the New Testament. The current initiatives taken by the Church were also discussed in detail bringing out the relevance of religious institutions towards conservation and sustainable management of water. The Third Group Meeting was held at the Karnataka Sanskrit University with 25 resource persons participated in the meeting and providing inputs of Hindu religion and its role in the protection of natural resources with a specific reference to water.

Work-In-Progress Workshops

We held four works-in-progress workshops on a monthly basis to review the progress of work. The review committee reviewed the papers in advance. During workshops, presentations were made by subject experts followed by reviewers comments which were based on the papers and the presentations made. Also organized a final workshop on the 'World Water Day', 22 March 2014 to which we invited a larger audience, resource persons across religions for their valuable feedback and suggestions. The papers were further revised based on the suggestions emerged during the final workshop.

At the very threshold of the enquiry, three scholarly efforts on Hindu, Islamic and Christian Philosophies, clearly emphasize and highlight, the primary and major distinction that has influenced the perception, prescriptions and practice concerning water. Water, as one of the five elements of nature (panchabhoota, namely, water, air, earth, fire and sky), is a manifestation of the divine being and hence sacrosanct, inviolable and invaluable under the Hindu faith. On the other hand, it is no more than one of the many creations of god-not the same as god-clearly apart, distinct as and of lesser significance than the Almighty, in the other two faiths. By that token, water is a resource, like any other, created by the creator. It can be objectified, commodified and evaluated in monetary terms and ascribed with an economic value. This idea and the fundamental difference has, indeed, steered the cultural orientations, ecological and economic understanding, use and management of water in the three faiths. Fascinatingly, all resource persons from all religions emphasized the significance of water augmentation, storage, protection, conservation, distribution and lessons to be drawn at all levels, for individuals and households, community and the state/government.

Based on an abundant literature on the above-mentioned aspects, there were several common aspects explained differently with a few aspects perceived differently as well. These ideas/perceptions have evolved over time and space with several factors having a profound influence, given the access to availability of water, which, in turn, influenced water resource management. For instance, in the Hindu scriptures, water is seen as being divine/holistic. However, Islam and Christian scriptures consider water as being created by a divine force and hence needs to be respected, protected and conserved.

Chapters

Given this backdrop, the chapters are organized as follows. This chapter provides an overview of how the messages from religious scriptures are relevant for sustainable water resources management and the process in which the scripture experts were engaged in writing the chapters. Chapters 2, 3 and 4 are contributions by scripture experts on water resource management in Islam, Christianity and Hinduism and Chap. 5 on legal perspective cuts across all the scripture-based chapters. Chapter 6 is on comparative overview across disciplines and the religious scriptures followed by Chap. 7 on policy perspectives that draw lessons for current contexts from across the scripture-based papers, respectively. To get an overall understanding, we have detailed them in the following paragraphs.

Chapter 2 'Water in Islam' by M. A. Siraj and M. A. K. Tayab refers the usage of references made on water in religious scriptures-the Holy Quran, Hadith and Sunnah and secondary sources—*Figh* and Islamic history. It is an earnest effort in presenting the Islamic scriptural directives and traditional practices related to water. The core aspects of the research work can be located in starting with 'Water in Holy Quran' and ends with 'Quranic Messages-Various Aspects'. These are faithful narrations of various Islamic Scriptural references, practices and cultural moorings over water, across dynasties. The references to ancient practices of irrigation, in particular, are informative and illuminating. Several aspects covered include judicious use of water, protecting water sources, the crucial need for storage of water, sustainable practices supported by guiding principles of water use, preservation and management, dogmas and practices regarding use of water in social and religious traditions which are well defined; technologies in water management are an interesting contribution as several innovative techniques evolved during the Mughal period and so on. Several verses are devoted to highlighting the ethical and moral messages of the Quran on the use and abuse of water which are very relevant and interesting.

Chapter 3 'Perspectives on the Water and the Bible' by Y. Moses refers to the Biblical records, which are inclusive of the Old Testament and the New Testament. The Biblical visualization of water as the source of life, as stated by the author, resonates with the Hindu scriptural conceptualization of water as life-giver and sustainer. The many splendored understanding of water is highlighted when the author draws attention to the over 700 references to water in the Bible. The passages cited and anecdotal references made by the author includes water is used as a metaphor for purification, blessing, relief and a force for rescuing from adversity and calamity.

There is a detailed account of the active engagement of the Christian institutions, in the education and propagation of the contemporary significance of the prescriptions and practices of the past that advocated access to and use of water, in a nondiscriminatory manner, in meeting the basic needs. Water is seen as a spiritual symbol and metaphor with several connotations associated with the use of water in ritual cleansing and purification besides the recognition of rights of the poor, approaches to conflict resolution and so on.

Chapter 4 'Water in Hindu Scriptures—Thank you, Water' by Sudhakar Sharma and Shruti crafted a wide variety of scriptural citations and their interpretations in all their splendored glory. There is joi de vivre in the entire presentation-total involvement, reverential attitude towards the great traditions and a sense of gratitude for all the values one gets to learn from the past. Here, 'Water' becomes a metaphor for the divinity and the write-up is more of an ode and a tribute to water. Water, the concept and its myriad uses get described in great detail. The authors have drawn lessons from references made in Vedas⁴ and scholarly manuscripts to several aspects of water management viz. technologies in water management and use, irrigation water management, water allocation and pricing, medicinal properties of water, and conservation of water for a sustainable use. Similarly, spiritual values associated with water have been pertinent in the ancient scriptures and practised in the daily routine rituals by communities. All this was perceived through viewing water as a 'divine component' where there was a greater emphasis on reverence for water, belief systems, religious practices through which they created a sense of awareness and respect towards water usage which helped conserve it as well.

Chapter 5 'Legal Lore of Water: Ecology and Scriptures' by Manjeri Subin Sunder Raj is a praiseworthy effort, for its sheer novelty and a welcome research exercise in hitherto an unchartered area, a wonderful canvas and a great starting point for future enquiries and analysis in law on Ecology, Scriptures and Water. In the legal conceptualization of water, a fairly adequate attempt has been made in bringing out the emotional, social, cultural and spiritual content and contexts of the times. The rights and duties, in relation to water and the treatment of the resource as a Common Property, are also discussed. The doctrinal bases of determination of rights and responsibilities over different manifestations and forms of water and water ecosystems are also given a due space for deliberation in this effort. Water governance and the principles anchoring them in different legal systems and civilizations have found a fairly good space in the enquiry. It also discusses the role of informal laws that played a major role in conservation of natural resources and the cultural practices across religions playing an important role, all these have a greater relevance to the current challenges particularly the violation of formal laws and linking the two in terms of drawing lessons for improved effectiveness and implementation in respect of the future water resources management.

⁴Vedas are the entire body of Hindu sacred writings, four books—the Rig-Veda, the Sama-Veda, the Atharva-Veda and the Yajur-Veda. Composed in Vedic Sanskrit, the texts constitute the oldest layer of Sanskrit literature and scriptures of Hinduism.

Chapter 6 'Water in Scriptures—A Comparative Overview' by K. V. Raju, S. Manasi, Abdul Aziz, M. K. Ramesh and M. S. Shruti discusses the evolution of water discussions across disciplines and drawing from the religion–scripture-based papers, an overview of common features that cuts across the rich cultures of these various religions. It highlights and emphasizes that all the scriptures across religions considered water with respect and reverence with slight variations in their perceptions about divinity, stewardship and others.

Chapter 7 'Policy Perspectives—Water and Scriptures' by A. Ravindra, K. V. Raju and S. Manasi discusses some of the current issues of water management, ecological sustainability and the emphasizes that the role of culture and learnings from scriptures would go a long way in addressing challenges in water conservation and management drawing some of the lessons drawn across the papers for policy that would be applicable to the current challenges in water resources management.

References

Alveré H (2012) Catholics for choice magazine, United States of America

- Elaide M (1996) Patterns in comparative religion (trans: Sheed R). Nebraska Press, London
- Gleick PH (2009) 'Thirsty word: Desperate quest for water', Excerpt from What Matters: The World's Preeminent Photojournalists and Thinkers Depict Essential Issues of Our Time, 20 Oct 2008. CNN.com
- Moses Y (forthcoming) Chapter 2.2: water and scriptures—ancient roots and perspectives. Springer, New York
- Nadkarni MV (2011) Ethics for our times. Oxford University Press, New Delhi, India
- Nair KS (2003) 'Role of water in Development of Civilization in India—a review of ancient literature, traditional practices and beliefs' 'The Basis of Civilization—Water Science? In: Proceedings of the UNI-SCO/1 AI IS/I WI IA symposium, Rome, December 2003
- Oestigaard T (2009) Water, culture and identity comparing past and present traditions in the nile basin region. BRIC Press, Bergen
- Price M (2009) Changing minds to prevent climate change. Monitor on Psychology 40(9):16
- Schelwald-van der Kley L, Reijerkert L (2009) Water: a way of life, Sustainable water management in a cultural context. Taylor and Francis Group, London, UK
- Sharma KN (2000) Environmental Protection and Water Reverence in Ancient Indian Culture Secretary, International Commission on Irrigation and Drainage (ICID) 48, Nyaya Marg, Chanakyapuri, New Delhi, India. http://www.scribd.com/doc/16813661/Environmental-Protection-and-Water-Reverence-in-Vedic-Culture-by-KN-Sharma-Secretary-ICID
- Siraj MA, Tayab MAK (forthcoming) Chapter 2.1: water and scriptures—ancient roots and perspectives. Springer, New York
- UNESCO (2003) Water for people water for life. UNESCO report, World Water Assessment Programme
- UNESCO Universal Declaration on Cultural Diversity (2002) A document for the World Summit on Sustainable Development, Johannesburg, 26 August–4 September 2002. UNESCO, Paris
- United Nations (2006) Planet in Peril: an atlas of current threats to people and the environment. Minneapolis
- World Water Day (WWD) (2006) United Nations Conference on Environment and Development (UNCED)
- World Water Forum (2003) Kyoto, Shiga and Osaka, Japan

Websites

http://www.dictionary.com/browse/veda https://en.wikipedia.org/wiki/Vedas http://www.waterandculture.org/264_Water_Wisdom http://environment.nationalgeographic.com/environment/freshwater/freshwater-crisis/ http://bora.uib.no/bitstream/handle/1956/3708/Book_WCI_lowres.pdf;jsessionid=D24DDC1A5E 649A875611CE7670610873.bora-uib_worker?sequence=1s http://www.apa.org/monitor/2009/10/climate-change.aspx

Water in Islam

M.A. Siraj and M.A.K. Tayab

Introduction

Life, food and water form one closely knit circular continuum. We could also visualize life to be poised/balanced on a tripod of '*air, water and food*', for it is only in water or with water that life processes can go on or sustained. Hence, clean potable water forms an indispensable component simultaneously; there is the output of waste products which are flushed out of organisms through water medium. These complex phenomena have given rise to studies such as ecology and environment. In this study, we shall trace the historical developments by way of contextualizing sacred texts and delineating the developments relating to the utilization of water. Thus, this chapter aims at understanding what these sacred texts as well as auxiliary texts have to say on these issues on the one hand, as also tracing their historical evolution, on the other. Hence, the crux is to relate how the people in different epochs solved their problems of getting adequate water and its efficient utilization and safe disposal of waste.

Methodology

This chapter bases itself principally on three sources, viz., the Holy Quran, *Hadith* and *Sunnah*, besides two secondary sources, viz. *Fiqh* and Islamic History.

Quran is a divine scripture revealed to Prophet Muhammad over a period of 23 years in the cities of Makkah and Madinah, where he lived during his prophethood. The verses of the Quran were brought by archangel Jibraeel regularly during (610 AD and 632 AD) and were memorized by the Prophet before imparting to a

M.A. Siraj (🖂) • M.A.K. Tayab

Centre for Contemporary Studies, Bengaluru, India e-mail: maqsiraj@gmail.com

[©] Springer International Publishing AG 2017 K.V. Raju, S. Manasi (eds.), *Water and Scriptures*, DOI 10.1007/978-3-319-50562-6_2

host of his companions who also memorized it through frequent recitations. The Prophet put the verses in a sequence (which is not the same as a chronological order of revelation). During the era of the third Caliph Osman, various versions that had been written down by that time were brought together, and uniformity was given to it. Ever since the days of Prophet Muhammad, people have been memorizing the entire 6000 and odd verses. Since the Quran is in rhymed prose, it lends itself to an easy memorization (called *Hifz*), which developed as a skill among Muslims.

Hadith (pronounced as *Hadees*) are the sayings of Prophet Muhammad, which come next in the hierarchy of religious text. There were great many narrators of *Hadith*, and they began to be compiled only after 200 years of the Prophet's death. By then, a lot of political changes had taken place with Islam graduating from a faith to an empire, while narrators had developed a variety of leanings and political affiliations. Consequently, *Hadith* with the same or similar contents could be found in varied forms and wordings by a host of narrators. Although six of the Hadith collections are known to be most authentic, i.e. *Sahih Bukhari, Sahih Muslim, Nisai, Tirmizi, Abu Dawud* and *Ibne Majah*, there is no guarantee of the accuracy and health of the text being original. According to the own admission of the six compilers, they did a lot of sifting, sorting, sieving and scrutiny, yet could not ensure that the wordings they were committing to writing were entirely those of the Prophet's. Besides, a lot of repetitions also bring down the actual volume of content that can be extracted from them. Thus, *Hadith* comes a distant second after the Holy Quran when it comes to accessing the Islamic teachings.

The third source is the *Sunnah* or traditions of the Prophet. This also forms part of *Hadith*. These are actions and deeds of the Prophet which his companions witnessed and related the account to others before they came to be recorded by the compilers of *Hadith*. These are purely in the wordings of the Prophet's companions.

Fiqh or jurisprudence is the fourth source for extracting the practices prevailing in the early Islamic societies. A bewildering variety of Fiqh has been produced by a large number of scholars. This is mainly their legal and juristic opinions on various issues related to the life and development in various societies, in various eras under a variety of political dispensations. Although it could be a guide to the way they elicited legal guidance from the actual scriptural sources of the religion, they may be totally irrelevant to our times. What is important is that, their opinion and formulae can be totally irrelevant today, but their method of arriving at a formula for their own societies and challenges typical to their times may be of some value for us.

Islamic History or Muslim history can be a source to know the way various Islamic societies and administrations adopted for dealing with issues of water management. Islam became an imperial force after 30 years of the Prophet's demise. The Prophet was succeeded by Abu Bakar (for tenure of merely 2 years), Umar (for 10 years), Osman (for 17 years) and Ali (for 4 years during which the Islamic state split between Madinah and Damascus). Umayyad Empire with its seat in Damascus and Abbasids with their capital at Baghdad became the principal centre of political administration. Later, the conquests brought lands up to Spain and Sind under their tutelage. Still later, a variety of sultanates came to rule over these lands with

Ottomans (from Istanbul), Mughals (from Delhi), Ayyubid and Fatimid (from Cairo), Al-Movahid and Al-Moravid (from Maghreb), carving up new sultanates. The history of these lands and dispensations has been documented by historians.

The references to the Quran have been provided in the brackets at the end of all verses (such as 2:14, i.e. 2 referring to the chapter and 14 referring to verse number). Since there exist a great variety of translations into English, in some cases, the name of the translator has also been mentioned.¹

Water, a Natural and Precious Resource

Water is one of the most vital resources for man. Water is (along with food) an indispensable input for all living beings (animals or plants). Thus, water being such a vital resource, man should carefully and frugally use it, indeed conserve it. He should act as a conservator, caretaker and trustee of water.

Water, Its Uses and Disposal

There are numerous steps that have to be taken and they could be enumerated thus:

- 1. Getting or procuring water
- 2. Utilizing it as it is obtained
- 3. Water storage and its safekeeping
- 4. Augmentation of its usefulness (a) by frugal use; (b) cleaning so as to make it suitable for particular use; (c) a hierarchy of standards of cleanliness could be easily recognized, e.g. (i) water for injection should not only be distilled but also be pyrogen-free; (ii) water for drinking and cooking; (iii) water for washing and cleaning; (iv) for bathing and cleaning; (v) for gardening, animal husbandry, agriculture and aquaculture; (vi) for industrial processing and so on
- 5. Under item 4 above, another set of criteria needs consideration, (a) both optimal and minimal use; (b) conservation; (c) protection.

The above list is, of course, indicative of one of the tasks to be performed, desiderata to be kept in view and standards to be maintained. These are broadly the subheads under which we would like to proceed.

When we speak of the use of water, the question of a safe and benign disposal after use presents itself for tackling it concurrently.

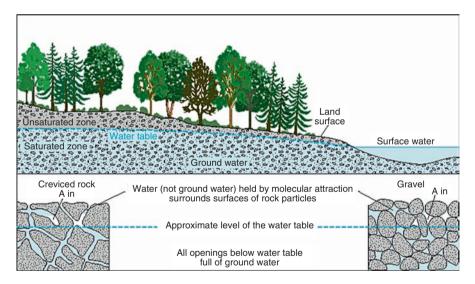
Hence, gradation and initial separation of out flowing stream and its recycling become imperative for dealing with such a polluted water stream. A grading system helps classify and segregate various streams and decision taken to recycle them. The aim is not to let a raw, untreated stream into public water bodies. These may be lakes,

¹The scheme of numbering verses of the Quran explained.

rivers or even the sea. A vigilant watch becomes imperative to prevent the polluter from escaping without paying towards the cost of reclaiming his waste stream. In a broader perspective, one can, of course, collect an element of cost towards this expense. In such a case, he does not have to bear this expenditure himself.

Rainfall, an Annually Renewable/Regenerative Process

Rainfall starts the cycle being the primary renewable source of freshwater. Rainfall varies according to the changing seasons during a given year. This annual cycle of rainfall helps replenish the supply of water to the parched earth. It is, of course, common knowledge that rainfall varies in intensity from place to place, season to season, etc. It is well known that a country like Malaysia or England receives rainfall for about 300 days in a year, whereas, at the other extreme, there are countries that receive rainfall for a limited number of days in a year, and what's more, even this may sometimes be copious or scanty. There are some areas hardly getting any rains during the year.



Surface and Groundwater Found in Nature

With the onset of rains, water starts flowing in small streams, rivulets, etc. They go dry when the rains are over. There are, of course, rivers big and small, seasonal or perennial. Apart from these sources, wells are also sunk which provide water either

throughout the year or they may also go dry in summer. Thus, water is available seasonally, i.e. periodically, and a very few places are blessed with adequate water throughout the year. However, man and his livestock need water throughout the year for they cannot manage to survive without water for more than a day or two. Hence, there is clearly a disjunction between daily requirements and seasonal unavailability. This necessitates perpetual efforts by people to store water from any or all sources that could be tapped. They must store the liquid either by harvesting the rainwater or collecting from seasonal flows in rivulets, streams and groundwater. This struggle is common to all cultures and civilizations of: ancient, middle or modern periods. The quest for locating/producing food and ensuring an adequate supply of water becomes the very basic and irreducible minimum requirement for the very survival of mankind. We shall try to trace the trajectory of this quest for food and water. While doing so, we shall see how religious beliefs, cultural norms of behaviour and social mores have all acted and interacted in terms of shaping and moulding the direction and intensity of this quest.

Mapping Water on the Planet

Even before we proceed to map the human quest for water, it will be useful to have an overview of form in which water exists and its quantity and accessibility in the nature. It is estimated that 71% of the surface of the earth is covered by oceans and seas. It does not come as a surprise that 97.5% of the available water is found in the oceans. The salinity gradient, the action of winds, tidal activity, etc. power the engine of seasonal (climate) variations of the planet. Hence, the vast oceans no doubt form an essential component of the planetary system.

It is not as if there is no water on this planet. There is enough and more water. Nevertheless, it comes as a sombre reminder that 97.5% of this water is in the oceans. The remaining 2.5% is available in the form of freshwater. Out of this, as much as 85% is locked up in the polar ice caps, tundra regions and in what the geographers call the third pole, viz., the Tibetan plateau with its snow covered high mountains and glaciers. The glaciers store rainwater and release some of the rainfall that is received, as ice melt to supplement the water supply of rivers during off seasons. Glaciers play a vital role in moderating climate.

Thus, a tiny slice of less than 1% of freshwater is there for all the creatures of the land. As much as 70% of this freshwater is used for irrigating crop lands. However, it is estimated that by efficiently using irrigation water, consumption could be cut by one-third.

- Total water on earth comes to 1.4 billion km³.
- Total renewable water falling on continents and islands/year is 41,000 km³.
- World population is over seven billion today.

That is why somebody has observed that the reality is that there is essentially no more freshwater available on the planet today than there was 2000 years ago. It is indeed the same water that the dragons drank aeons ago.²

Freshwater being scarce is also the most distributed item on earth. 'Of all the planet's renewable resources, freshwater may be the most unforgiving, difficult to purify, expensive to transport and impossible to substitute, water is essential to food production...'³

Common Sources of Water

Having quantified the freshwater resources of the earth, we shall now look at the sources that are commonly tapped to get the required supplies. There are surface water sources which could be tapped easily such as a river or a lake. You may only have to dip your vessel and take the water. However, to tap groundwater, e.g. you may have to sink a well from a shallow open well to a deep bore well. The shallow wells tap the near subsurface water which is recharged during the annual rainfall cycle; thus, these are renewable sources.

However, the depth of deep bore wells may vary from 100 to 1000 ft. Of course, there are areas where they go down to even 10,000 ft! Here, water accumulation is not a result of annual rainfall. Water has accumulated over a geological period—meaning over centuries. It means tapping water from such sources amounts to mining water. When once exhausted, recharge will be a matter of hundred centuries or so! This has already happened in some arid zones. It shows how very careful and circumspect we should be while harvesting groundwater. It may be seen that we are refraining from using the common expression—'exploitation of groundwater'. To our ears, it is an absolutely inapt expression!

Quality/Grade of Water

We can distinguish between various qualities of water, e.g. water with some dissolved gas such as oxygen. Only such aerated water is suitable for aquatic life—irrespective of whether the creatures inhabit lakes, rivers or seas. That is why if water is boiled or steam is condensed, all the dissolved gases would have evaporated. No fish could live in such water. It is dubbed as sterile water.

²Earth is estimated to have, 1.4 billion km³ of water. The three moons of the Jupiter have: Europa 2.9 times earth's (water), Callisto 27 times earth's, Gandymede 36 times earth's and among Saturn's moon, Titan has 29 times earth's water. Most of the above have it in the form of ice and some water underneath. [*National Geographic*, April 2010]

³C. P. Kumar: *Fresh water resources: A perspective...*,Roorkee: International Year of fresh water 2003 www.angelfire.com/bc/mhhrrc/documents/fresh.html

Then, there is water with dissolved salt or sugar, for instance (or any other organic or inorganic substance). There is also saltish water, polluted water and so on.

Nevertheless, it may be appreciated that there is nothing like absolutely pure water for after all; water is well known as universal solvent.

Water, a Critical Resource

Water is a critically vital resource for sustaining life on earth; it behoves us to see what the Quran says about it. Moreover, even a cursory glance makes it clear that the Quran, the Bible and the Vedas, as do other scriptures and sacred books, all extol the role of water, while describing it extensively.

Quran Says All Life Created with and Dependent on Water

Quran is replete with references to the bounty bestowed on His Creation by sending rains...In the first instance, let's see two verses: 'God has created every animal from water....' (24:45). This verse is followed by another which adumbrates that 'It is He who has created man from water...' (25:54). This is followed by a third verse, which speaks about plants.

It is stated that 'It is He who sends down water from the skies; you drink thereof, and the plants also are satiated, on which you pasture your livestock, [and] by virtue of this, He causes crops to grow for you,...' (16:10 and 11).

Rainwater, a Bounty Showered by God

Further, about the quality and quantity of rains, 25:48 states that 'We cause pure water to descend from the skies...' and 15:22 adds that 'and we let loose the winds to fertilize [plants] and send down water from the skies and let you drink thereof...'

Sent as per Set Criteria

And in 23:18, it is stated that 'And we send down water from the skies in accordance with "set criterion" (measure) [set by us]...'.

The above extracts from the verses make it clear that water is essential for life on earth and is of course, necessary for survival/growth of plants, animals and man. It is iterated that rainwater is pure water and that it is sent down according to set criterion (measure). In view of these verses, the adage that without water 'we are nothing' rings true.