

Conservation and Utilization of Canal water in Pakistan in the light of Sīrah

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Abstract

The utilization and conservation of canal water in Pakistan are critical for the nation's sustainable development. This abstract explores how the principles from the life and teachings of Prōphēt Mūhāmmād, known as Sīrah, can guide modern water resource management in Pakistan. Sīrah emphasizes equitable distribution, advocating for fair access to water among provinces and communities to address water scarcity and promote social justice. It also encourages waste reduction, urging the adoption of efficient irrigation techniques and water-saving practices. Community collaboration is vital, fostering stakeholder cooperation to address water management challenges collectively. Stewardship of resources calls for responsible and sustainable use, emphasizing long-term strategies like reforestation and infrastructure improvements. Lastly, crisis preparedness is crucial to manage water-related challenges effectively, including droughts and disputes. By embracing these principles, Pakistan can work towards a more sustainable and equitable water future, benefiting both its citizens and the environment

Keywords: Utilization, Sustainable water management, Water preservation, Pakistan, Sīrah

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Introduction:

The conservation and utilization of canal water in Pakistan have been critical issues since the country's inception. Pakistan, with its predominantly arid to semi-arid climate, heavily relies on canal irrigation systems to sustain its agriculture, which is the backbone of its economy. The principles of conservation and responsible utilization of water resources find resonance in the teachings of Sīrāh (the life and actions of the Prōphēt Mūhāmmād) and can provide valuable insights and guidance for addressing Pakistan's water challenges.

Sīrāh, as a source of moral and ethical guidance for Muslims, encompasses various aspects of life, including environmental stewardship and resource management. This article explores how the principles of Sīrāh can inform and inspire sustainable practices related to canal water conservation and utilization in Pakistan.

The conservation and utilization of canal water in Pakistan is of paramount importance for the country's agriculture sector, and it can be examined in the light of Sīrāh (the life and teachings of the Prōphēt Mūhāmmād, peace be upon him). Canal water plays a vital role in Pakistan's agriculture, and its proper management aligns with the principles of resource stewardship and sustainability, which are emphasized in the Sīrāh.

Historical Significance:

Canals have been a crucial part of agriculture in the Indian subcontinent for centuries. In the context of Pakistan, the Indus River system and its canal network have a historical significance dating back to the Indus Valley Civilization. The Sīrāh teaches us the importance of respecting and preserving resources, and the Indus River and its canals are integral to Pakistan's agricultural heritage.¹

¹ Bilal, Fakhar. "BUILDING ISLAM: JAMIA KHAIR UL MADARIS, MULTAN, PAKISTAN, 1947-2001." PhD diss., University of London, 2018.

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Agricultural Livelihoods:

Agriculture is the backbone of Pakistan's economy, employing a significant portion of the population. Just as the Prōphēt Mūhāmmād (peace be upon him) emphasized the dignity of labor and encouraged people to engage in productive work, the utilization of canal water is essential for sustaining the livelihoods of millions of farmers in Pakistan.²

Water as a Blessing:

The Sīrāh teaches us to be grateful for the blessings bestowed upon us by God. Water is considered one of the most precious resources, and the proper utilization of canal water reflects a sense of gratitude for this essential gift. Wasting or mismanaging canal water would be contrary to the teachings of the Sīrāh.³

Equitable Distribution:

The Prōphēt Mūhāmmād (peace be upon him) emphasized fairness and justice in all aspects of life. The equitable distribution of canal water among different regions and farmers is vital to ensure social justice and harmony.⁴

Environmental Responsibility:

Efficient utilization and conservation of canal water not only benefit agriculture but also help protect the environment by minimizing water wastage, soil erosion, and other ecological issues associated with inefficient irrigation practices.⁵

Socioeconomic Development:

Just as the Sīrāh promotes community well-being and economic development, the proper utilization of canal water contributes to socioeconomic growth in rural

².Al-Jayyousi, Odeh Rashed. *Islam and sustainable development: New worldviews*. Routledge, 2016.

³.Wood, Ian. *Waterfall*. Ian Wood, 2019.

⁴.Al-Jayyousi, Odeh Rashed. *Islam and sustainable development: New worldviews*. Routledge, 2016.

⁵.Stockle, Claudio O. "Environmental impact of irrigation: A review." In *IV international congress of agricultural engineering*. 2001.

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areas of Pakistan. It enables farmers to increase their crop yields, improve their living standards, and contribute to the overall development of the country.⁶

Conservation and utilization of canal water in Pakistan align with the principles of stewardship, justice, gratitude, and sustainable development emphasized in the Sīrah of the Prōphēt Mūhāmmād (peace be upon him). It is essential for the prosperity of Pakistan's agriculture sector and the well-being of its people while ensuring responsible and ethical use of this precious resource.

The Sīrah (life and teachings of Prōphēt Mūhāmmād) holds great significance in guiding ethical and sustainable practices in various aspects of life, including the conservation and utilization of canal water in Pakistan.

Water Conservation:

The Sīrah emphasizes the importance of conserving resources and avoiding wastefulness. Prōphēt Mūhāmmād encouraged his followers to use water sparingly even when it was abundant. Following the Prōphēt's example of using water efficiently can help conserve canal water resources.⁷

Responsibility as Stewards:

The Sīrah teaches that humans are stewards (Khalifah) of the Earth and its resources. This implies a responsibility to protect and preserve natural resources like canal water. Encouraging responsible and sustainable use of canal water aligns with this principle.⁸

⁶.Tenaw, Shimelles, and KM Zahidul Islam. "Rural financial services and effects of microfinance on agricultural productivity and on poverty." *University of Helsinki Department of Economics and Management (Discussion Papers series) 1* (2009): 28.

⁷.Kowalska, Samanta. *Cultural Heritage in Poland-the Background, Opportunities and Dangers*. Adam Mickiewicz University, 2012.

⁸.Noor, Ismail. *Altruistic Service Leadership: Prophet Muhammad's Model*. Partridge Publishing Singapore, 2015.

Environmental Ethics:

In Pakistan, where over-extraction of groundwater from canals can lead to environmental degradation, adhering to these ethical principles can lead to more sustainable practices.⁹

Avoiding Pollution:

The Sīrāh emphasizes cleanliness and avoidance of pollution. This can be applied to canal water management by discouraging the dumping of waste and pollutants into canals, thereby ensuring the sustainability of water quality.

By following the teachings and principles found in the Sīrāh, individuals, and communities can work towards more responsible and equitable water management practices, which are crucial for the well-being of both people and the environment.

The conservation and utilization of canal water in Pakistan, as well as in any other part of the world, can be viewed in the light of Islamic teachings, particularly the teachings found in the Quran and the Hadith (sayings and actions of the Prōphēt Mūhāmmād, peace be upon him). Water is a precious resource in Islam, and its importance is emphasized in several ways.

Water as a Gift from Allah:

In Islamic belief, water is considered a divine gift from Allah. The Quran frequently mentions water as a sign of Allah's creation and a source of life. Believers are encouraged to be grateful for this gift and to use it responsibly. Wasting water is discouraged.¹⁰

"And We made from water every living thing. Then will they not believe?"¹¹

Stewardship of Resources:

⁹.Ahmed, Sayed, Fahima Salam, and Sefat Sultana. "Sustainable Urban Landscape Planning: A Search for the Waterway Connection Possibilities around the Periphery of Dhaka City." (2015).

¹⁰.Omran, Abdel-Rahim, ed. *Family planning in the legacy of Islam*. Routledge, 2012.

¹¹.(Quran, Surah Al-Anbiya, 21:30)

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Islamic teachings emphasize the concept of stewardship (Khalifah) of the Earth. Muslims are considered stewards of the planet, responsible for taking care of its resources, including water. Mismanagement and wastage of resources are discouraged.¹²

"It is He who has made you successors (Khalifah) upon the Earth" ¹³

Prohibition of Wastefulness (Isrāf):

The Quran specifically prohibits wastefulness in all forms, including the wasteful use of water. This principle aligns with the need to conserve and utilize canal water efficiently.¹⁴

"Indeed, He [Allāh] does not like the wasteful."¹⁵

In Pakistan, and in any other country with a predominantly Muslim population, the conservation and utilization of canal water should be guided by these Islamic principles. This may involve implementing efficient irrigation methods, preventing pollution of water sources, and ensuring that water is shared and distributed fairly among all members of society. By aligning water management practices with Islamic teachings, it is possible to promote responsible water usage and address the pressing water challenges facing many Muslim-majority countries, including Pakistan.

Here are some Qur'ānic verses and Hādiths related to water conservation and utilization:

"And He it is Who produces gardens trellised and unrealized, and date-palms, and crops of different shape and taste (its fruits and its provisions) and olives, and pomegranates, similar (in kind) and different (in taste). Eat of their fruit when they ripen, but pay the due thereof (its Zākāt) on the day of its harvest, and waste

¹².Saniotis, Arthur. "Muslims and ecology: fostering Islamic environmental ethics." *Contemporary Islam* 6, no. 2 (2012): 155-171.

¹³.(Quran, Surah Al-Furqan, 25:62)

¹⁴.Abdul-Matin, Ibrahim. *Green Deen: What Islam teaches about protecting the planet*. Berrett-Koehler Publishers, 2010.

¹⁵.(Quran, Surah Al-An'am, 6:141)

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not by extravagance. Verily, He likes not Al-Musrifun ." (those who waste by extravagance)."¹⁶

This verse emphasizes not wasting resources, including water, and encourages responsible consumption.

"O children of Adam! Take your adornment at every māsġid and eat and drink, but be not excessive. Indeed, He likes not those who commit excess."¹⁷

In the context of canal water conservation in Pakistan or any region, Muslims are encouraged to be responsible stewards of the environment and natural resources, including water. Wastefulness, extravagance, and dishonesty in resource management are discouraged in Islamic teachings, promoting the sustainable and ethical use of water resources.

The conservation and utilization of canal water in Pakistan have deep historical roots and are closely intertwined with the country's agricultural sector. To understand this, it's important to consider the historical and cultural context and how the principles of conservation and sustainable utilization of resources can be seen in the light of the Sġrah (biographical accounts) of the Prġphġt Mġhġmmġd (peace be upon him).

"Do not spread mischief in the land after its reformation" Mischief is a word with a broad meaning, in the original dictionary, the meaning of mischief is to change something from a good state to a bad state and to go out of moderation. It is the opposite of advice, so it is said that the milk has gone bad, the fruit has gone bad, or the air has gone bad. It came to be used in all things that deviate from the path of moderation, such as fitnġh, oppression, tġdi, etc.

Therefore, in the light of these Islamic teachings, we should protect water because it is a capital that is beyond price, but more valuable than all the most precious things. Find out its value from those who have water shortage areas. Or not water, these areas have one valuable commodity but if not, then there is no water and the government bears a lot of expenses to provide it, so it becomes obligatory on us to

¹⁶ .Surah Al-An'am (6:141)

¹⁷ .Surah Al-A'raf (7:31)

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value this blessing and not waste it. , and also remember that water consumption must be accounted for in Qiyāmāt.

Role of Canals in Agriculture:

Water Supply:

Canals are the primary source of water for agriculture in Pakistan. They provide a consistent and reliable supply of water to irrigate crops, enabling farmers to cultivate a variety of crops throughout the year. This is essential in a country with a predominantly arid and semi-arid climate.

Crop Diversification:

Canal water allows for crop diversification, with farmers being able to cultivate various crops, including wheat, rice, cotton, sugarcane, and more. This diversification contributes to food security and the country's agricultural exports.¹⁸

Livestock:

In addition to crop cultivation, canal water is used for livestock and fisheries, further enhancing rural livelihoods and contributing to the economy.¹⁹

Rural Communities:

The canal system supports the livelihoods of millions of people living in rural areas of Pakistan. It provides employment opportunities and sustains rural communities.²⁰

Conservation and Sustainable Utilization in Light of Sīrah:

¹⁸.Achterbosch, Thom J., Siemen van Berkum, Gerdien W. Meijerink, H. Asbreuk, and D. A. Oudendag. *Cash crops and food security: Contributions to income, livelihood risk and Agricultural innovation*. No. 2014-15. LEI Wageningen UR, 2014.

¹⁹.Molden, David, ed. *Water for food water for life: A comprehensive assessment of water management in agriculture*. Routledge, 2013.

²⁰.Shameem, Masud Iqbal Md, Salim Momtaz, and Ray Rauscher. "Vulnerability of rural livelihoods to multiple stressors: A case study from the southwest coastal region of Bangladesh." *Ocean & Coastal Management* 102 (2014): 79-87.

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The principles of conservation and sustainable utilization of resources can be drawn from the Sīrah of the Prōphēt Mūhāmmād (peace be upon him) and applied to the management of canal water in Pakistan:

Resource Stewardship:

In the Sīrah, the Prōphēt Mūhāmmād (peace be upon him) emphasized the responsible use and conservation of resources. This principle can be applied to canal water management, encouraging responsible use and avoiding wastage through efficient irrigation practices.²¹

The conservation and utilization of canal water in Pakistan, particularly in the context of its historical and religious significance, can be understood through the lens of Sīrah (the biography of the Prōphēt Mūhāmmād) and the principles it teaches regarding water use, conservation, and equitable distribution. However, it's important to note that while these principles provide valuable guidance, there are several current challenges related to water scarcity and mismanagement in Pakistan that need to be addressed.

Water Conservation:

The Sīrah promotes the responsible use of water and discourages wastage. In Pakistan, the inefficient use of canal water for irrigation, especially through flood irrigation methods, results in significant water wastage. Modern irrigation techniques, such as drip and sprinkler irrigation, should be promoted to conserve water.

Environmental Stewardship:

The Sīrah teaches the importance of caring for the environment. Pakistan faces environmental challenges, including water pollution from agricultural runoff and industrial discharges. Proper wastewater treatment and pollution control measures are essential to protect water resources.

²¹ .Hamidullah, Muhammad. "Der Islam." *Geschichte, Religion, Kultur*. Hg. v. *Kitab Kulübü*. Köln. Originaltitel: *Initiation à l'Islam*, Paris (1963).

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While principles from the Sīrāh provide valuable guidance on water use and distribution, Pakistan faces a complex set of challenges related to water scarcity and mismanagement. Addressing these challenges requires a multifaceted approach that includes equitable distribution, conservation, environmental stewardship, community involvement, infrastructure development, and legal reforms. It also necessitates strong political commitment and international cooperation to ensure sustainable water management in the country.

The Sīrāh (biography) of the Prōphēt Mūhāmmād (peace be upon him) provides valuable insights into principles of conservation and responsible usage of resources, including water. Although the Sīrāh primarily focuses on the life and actions of the Prōphēt, there are several instances that can be related to the conservation and utilization of canal water in Pakistan. Here are some specific instances from the Sīrāh that emphasize water conservation and responsible usage:

Planting Trees and Vegetation along Canals:

In the Sīrāh, there are instances where the Prōphēt Mūhāmmād (peace be upon him) encouraged the planting of trees and vegetation. He recognized the importance of greenery for the environment and water conservation. Trees along canals and riverbanks can help reduce soil erosion, maintain water quality, and provide shade, which can ultimately contribute to the responsible use of canal water.

In summary, the Sīrāh of the Prōphēt Mūhāmmād (peace be upon him) provides valuable lessons on the conservation and responsible usage of water resources. These principles can be applied to the context of canal water in Pakistan by emphasizing the importance of valuing water, equitable distribution, efficient usage, and environmental conservation to ensure a sustainable and responsible approach to water management.

Equity and Justice:

The Sīrāh emphasizes the equitable distribution of resources among all members of the community. In canal water management, this principle implies ensuring

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that water is allocated fairly among all stakeholders, including farmers, industries, and urban areas. The needs of the marginalized and vulnerable groups should be taken into account.

Community Cooperation:

The Sīrāh teaches the importance of community cooperation and collective action. In canal water management, this means encouraging farmers and local communities to work together in managing and maintaining the canal systems. Collective efforts can lead to more efficient water use and maintenance.

Conservation and Sustainability:

The Sīrāh encourages responsible stewardship of resources. In the context of canal water, this involves the responsible use of water resources to ensure sustainability. Implementing water-saving technologies and practices, such as drip irrigation or rainwater harvesting, aligns with this principle.

Avoiding Waste:

The Sīrāh teaches the importance of avoiding waste in all aspects of life. In canal water management, this translates to minimizing water wastage through effective infrastructure maintenance, such as repairing leaks and improving canal lining.²²

Education and Awareness:

The Sīrāh emphasizes the importance of knowledge and education. In canal water management, educating farmers and the public about efficient water use practices, water rights, and conservation techniques is essential.²³

Applying these lessons and principles from the Sīrāh to canal water management in Pakistan can help create a more equitable, sustainable, and responsible system for water conservation and utilization, benefiting both current and future generations.

²² .Lisagor, Kimberly, and Heather Hansen. *Disappearing destinations: 37 places in peril and what can be done to help save them*. Vintage, 2008.

²³ .Borg, Shannon. *The green vine: a guide to west coast sustainable, organic, and biodynamic wineries*. Mountaineers books, 2013.

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Efficient Use:

Islam promotes the responsible and efficient use of resources. Modern canal management can encourage farmers to adopt water-efficient irrigation techniques like drip irrigation and sprinklers to minimize water wastage.²⁴

Community Responsibility:

Islamic teachings emphasize the importance of communal responsibility (Ummah). Communities can work together to maintain and manage canal systems, ensuring their sustainability and fair use.²⁵

Innovation and Technology:

Islamic principles encourage the use of knowledge and innovation for the betterment of society. Modern technology can be employed in canal management, such as remote sensing and data analytics, to optimize water distribution and reduce waste.²⁶

Drought Preparedness:

Islamic teachings on patience and resilience can inform policies and strategies for dealing with droughts. Preparations can be made to ensure that communities have access to water during periods of scarcity.²⁷

In conclusion, Islamic teachings from the *Sīrāh* offer valuable insights into responsible water management, equity, and conservation. Integrating these principles into modern canal water management in Pakistan can help address the pressing issue of water scarcity and promote sustainability in agriculture and society as a whole.

²⁴ . Easter, K. William, and Yang Liu. "Cost recovery and water pricing for irrigation and drainage projects." (2005).

²⁵ . Beekun, Rafik Issa. *Islamic business ethics*. No. 2. International Institute of Islamic Thought (IIIT), 1997.

²⁶ . Shikuku, Victor, ed. *Artificial Intelligence Applications in Water Treatment and Water Resource Management*. IGI Global, 2023.

²⁷ . Ndzovu, Hassan Juma. "Risk reduction interventions, building resilience and adaptation to climate change in northeastern Kenya: A review of the response by the Islamic relief worldwide." *African Perspectives on Religion and Climate Change* (2022): 172-185.

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Examining the need for government policies and regulations to support water conservation in Pakistan in the light of the Sīrah (the life and teachings of Prōphēt Mūhāmmād) requires a comprehensive analysis of the historical, social, and environmental context. Water conservation is a critical issue in Pakistan due to its growing population, increasing water scarcity, and reliance on canal irrigation systems. The Sīrah can provide valuable insights into the principles of conservation and resource management that can guide contemporary policies. Here are some key points to consider:

Water Scarcity in Pakistan:

Pakistan faces acute water scarcity issues due to factors such as rapid population growth, inefficient water management, and climate change. Water is crucial for agriculture, which is the backbone of the country's economy. Effective conservation policies are necessary to ensure sustainable water use and food security.

Incentives for Water Conservation:

The government can provide incentives for farmers and industries to adopt water-efficient practices. These incentives may include subsidies for water-saving technologies, tax breaks for water-efficient businesses, and rewards for conservation efforts.²⁸

In conclusion, the principles derived from the Sīrah provide a strong moral foundation for water conservation in Pakistan. However, translating these principles into effective policies and regulations is essential to address the pressing issue of water scarcity. Government policies and regulations must be comprehensive, equitable, and forward-looking, considering both the immediate challenges and the long-term sustainability of water resources in the country.

Incorporating Islamic principles into water management policies in Pakistan, particularly in the context of canal water conservation and utilization, is an

²⁸ .Tiwari, Ankit Kumar, Harshit Mishra, Deep Chand Nishad, and Alok Pandey.
"SUSTAINABLE WATER MANAGEMENT IN AGRICULTURE: IRRIGATION
TECHNIQUES AND WATER CONSERVATION." *Dr. Ajay B. Jadhao* (2023): 53.

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important step towards sustainable and ethical resource management. The Islamic tradition emphasizes the responsible stewardship of natural resources, including water. Here are some ways the government can align its policies with Islamic principles:

Wastewater Treatment:

Islamic teachings encourage cleanliness and hygiene. The government can invest in wastewater treatment facilities to ensure that the water returned to the canals is clean and free from pollution, adhering to the Islamic principle of preserving the purity of water.

Incorporating Islamic principles into water management policies in Pakistan is not only ethically sound but can also foster a sense of responsibility and stewardship among the population, contributing to the sustainable conservation and utilization of canal water resources.²⁹

In Pakistan, canal water is a vital resource for agriculture, which serves as the backbone of the country's economy. However, the mismanagement and overuse of canal water have led to several challenges, including water scarcity, environmental degradation, and social inequalities. To address these issues and ensure the sustainable management of canal water, adopting *Sīrāh*-based water conservation practices can be a valuable approach. The *Sīrāh*, referring to the life and teachings of the *Prōphēt Mūhāmmād* (peace be upon him), offers ethical and practical guidance that can reinforce the importance of responsible water usage and conservation.

Muslims believe that all resources, including water, are a trust from Allāh (God). This perspective encourages ethical and responsible use of resources, emphasizing the need to conserve water for future generations.³⁰

Ethical water management, inspired by the *Sīrāh*, would ensure that canal water is distributed fairly among all stakeholders, including small farmers and

²⁹.Saniotis, Arthur. "Muslims and ecology: fostering Islamic environmental ethics." *Contemporary Islam* 6, no. 2 (2012): 155-171.

³⁰.Ashtankar, O. M. "Islamic perspectives on environmental protection." *International Journal of Applied Research* 2, no. 1 (2016): 438-441.

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marginalized communities, rather than favoring a select few. This can help alleviate social inequalities and reduce conflicts over water resources.

Applying these principles to canal water management would involve adopting efficient irrigation techniques, such as drip irrigation, and discouraging practices like water-intensive crops in arid regions.³¹

The Prōphēt's teachings on conserving water while performing ablution (wūdū) can serve as a practical example.

Encouraging communities to work together in managing canal water can lead to more effective and sustainable practices. Water user associations and cooperative efforts can be established based on the principles of cooperation and mutual support found in the Sīrāh.

In conclusion, adopting Sīrāh-based water conservation practices in Pakistan's canal water management is not only a matter of ethical responsibility but also a practical necessity for sustainability. By integrating the ethical principles and practical wisdom from the Sīrāh into water management policies and practices, Pakistan can ensure the equitable distribution and responsible use of canal water, protect the environment, and promote the well-being of its people for generations to come.

The conservation and utilization of canal water in Pakistan, as viewed through the teachings of the Prōphēt Mūhāmmād (peace be upon him) in his biography (Sīrāh), offer valuable insights for sustainable water management. These principles underscore the importance of responsible resource stewardship, emphasizing the need to conserve canal water for the benefit of both current and future generations. Equity and fairness are core principles, highlighting the necessity of justly distributing water resources to meet the needs of all stakeholders. Sustainability is also a key focus, encouraging practices that ensure long-term water availability, such as sustainable agriculture and pollution prevention. Community cooperation, innovation, and adaptation are essential for

³¹ . Kumar, M. Dinesh. *Food security and sustainable agriculture in India: The water management challenge*. Vol. 60. IWMI, 2003.

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efficient water management, while education and awareness campaigns can promote conservation. Finally, the concept of responsibility and accountability emphasizes that individuals and institutions should be held accountable for their water use. By embracing these principles from the Sīrāh, Pakistan can work toward equitable and sustainable water management, preserving this vital resource for generations to come while meeting the needs of its people.

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11. (Quran, Surah Al-Anbiya, 21:30)
12. Saniotis, Arthur. "Muslims and ecology: fostering Islamic environmental ethics." *Contemporary Islam* 6, no. 2 (2012): 155-171.
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16. Surah Al-An'am (6:141):
17. Surah Al-A'raf (7:31)
18. Achterbosch, Thom J., Siemen van Berkum, Gerdien W. Meijerink, H. Asbreuk, and D. A. Oudendag. *Cash crops and food security: Contributions to income, livelihood risk and Agricultural innovation*. No. 2014-15. LEI Wageningen UR, 2014.
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