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Nargizakhon Urinovna Komilova
Ferghana State University
Geography Ph.D. Candidate,
Faculty of Life Sciences, Department of Geography,
Fergana, Uzbekistan
nargizakamilova76@gmail.com

Zuhriddin Kamoliddin ugli Juraev
Chonnam National University
Geography Ph.D. student,
Faculty of Social Sciences, Department of Geography
Gwangju, South Korea.
phd.zjuraev@gmail.com

GEOGRAPHICAL FEATURES OF WATER-LAND USE: ETHNOLANSCAPE REALLY MATTERS

Abstract: *One of the regional aspects of the use of ethnolandscape is the diversity of its principles of formation, functioning, and development in space and time. This article discusses the work of the great Islamic scholar Burhan Al-Din Marginani, who lived in Central Asia, entitled "Al-Hidayah" and the spatial patterns of the use of water and water resources in similar sources. An analytical and informative discussion of the norms in the comments to the work "Al-Hidayah". Because today, water and land management has become one of the key issues of sustainable development. The water use skills of the population will be analyzed, as well as the culture of alternating use of river water and basin management, which have ecological significance, geographical content, and essence. Relevant comments and suggestions on the topic are provided.*

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Introduction

One of the regional aspects of the use of ethnolandscape is the diversity of its principles of formation, functioning, and development in space and time. For thousands of years, the people of Central Asia have used water resources wisely and collaboratively under *Islamic Sharia law*[1]

To date, water and land management has become one of the key issues for sustainable development. Despite the growing awareness among water professionals that the water demand is in line with the order and internal norms developed within the social and cultural background of consumers, the potential for the ethnic and cultural diversity of the population is growing. Little research is being done on the mystery.

According to the World Bank[2] and similar statistical sources[3], it uses watershed management

[1] *A religious law forms part of the Islamic tradition. It's derived from the religious precepts of Islam and is based on the interpretations of the sacred scriptures of Islam, particularly the Quran and the Hadith.*

[2] *The World Bank is an international financial institution that provides loans and grants to the governments of low- and middle-income countries to pursue capital projects.*
[3] *UNCTAD stat, Statistics of Uzbekistan, etc.*

assessment approaches as a key to identifying the link between landscape improvement, increasing productivity, and achieving real sustainability of natural resources. Their approach to water management has expanded beyond hydrological considerations - to use the land and resources in the basin to produce the products and services they need without harming the soil and water. At the same time, it recognizes the connection between the upstream and downstream regions.

Literature review

One of the most ancient sources in the use of water resources is Al-Marghinani's[4] *Al-Hidayah*[5] and its commentaries (such as Mukhtasari Viqaya), Shurunbulali's[6] *Maraaqi*[7], and other related texts on water and land. In addition, in different years in Uzbekistan, Mamaniyazov S.M. (1967), Yunusov M.Yu. (1973), Lavronov G.A. (1979), H. Yusupov (1990, 2001, 2011, 2014), and others have studied these topics.

Methods and Aims

This article discusses the work of the great Islamic scholar Burhan Al-Din Marginani, who lived in Central Asia, entitled *Al-Hidayah*, and the use of water and water resources in similar sources. In this article, we will quote from the texts on the legal basis of rational use of land and water in the comments of the work *Al-Hidayah* and share conclusions about the geographical features and characteristics of the subject based on informative analysis.

Analysis and Result

In this article, we have focused on the ethnoecological aspects of the issue, traditions, skills, and competencies aimed primarily at preventing adverse environmental conditions that may occur as a result of irrigation. In particular, the water use skills of the population of the Fergana Valley in Uzbekistan, the culture of alternating use of river water, and basin management, which are of ecological importance, geographical content, and significance, were studied separately.

As a result of the evolution of watershed management, the practice of integrated watershed management has now become a trend. At the same time, the proposal to manage integrated water bodies should come to the fore. Because it is based on the basic principles of water management to combine different social, technical, and institutional dimensions, as well as nature protection, social and economic goals. This integration *"creates a flexible, comprehensive, integrated multi-resource management planning process that seeks to balance healthy ecological, economic and cultural/social conditions in the watershed"*. It serves to combine land and water planning; it takes into account the flow of groundwater and surface water, recognizes and plans the interactions of land, water, plants, animals, and humans located within the physical boundaries of the watershed. This has reinforced the recognition of the importance and necessity of a holistic, ecosystem-based, multi-purpose approach to land management.

Main part. Discussion

The chapters of "Al-Hidayah" such as *"Land use"* (*Muzora'a*), *"Discovery of protected lands"*, *"Water use"*, *"Waqf book"* led to the efficient use of water during the period. It is well known that the management of water bodies means the use of land, forests, and water resources in ways that do not harm the people, plants, and animals that live there. A water basin is also the area of land that drains or "pours" water into a particular body of water.

In *al-Hidaya* author states that the following norms[8] focus on encouraging the development of protected and gray lands in the region: according to which, if someone digs a well somewhere and draws water, that well and its surroundings become his legal property. It is said, *"For a well whose water is drawn by hand from a bucket, and for a well whose water is drawn utilizing a camel or other animal, forty ziro (1 ziro-66 cm) on all four sides will belong to the well-digger"*. That is if someone digs a well of this category, the area around it is about 2 meters wide on all four sides of the well, the legal property of the owner of the well.

It should be noted that watershed management may include goals and processes such as reducing the number of pesticides and fertilizers that wash away agricultural fields and nearby water bodies. The construction of dams and the reorientation of rivers are two examples of ways in which people have a direct impact on water in water bodies. In similar factors, such as the ownership and management of wells and water resources, as shown above, shows the urgency of the work on this issue.

Another norm is to prevent the vacant, uncultivated land from harming society and says: *if he does not make it suitable, the governor will give the*

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[4] *Burhān al-Dīn Abu'l-Ḥasan ʿAlī bin Abī Bakr bin ʿAbd al-Jalīl al-Farghānī al-Marghīnānī was an Islamic scholar of the Hanafi school of jurisprudence. He was born in Marghinan near Farghana in 530/1135 He died in 593/1197.*

[5] *Al-Hidayah fi Sharh Bidayat al-Mubtadi, commonly referred to as al-Hidayah, is a 12th-century legal manual by Burhan al-Din al-Marghinani, which is one of the most influential compendiums of Hanafi jurisprudence. It has been the subject of numerous commentaries.*

[6] *Shurunbulali is Abul Ikhlas Hasan ibn `Ammar ibn `Ali al Shurunbulali al Wafa'i (964-1069), a major Hanafi imam and verifier (muhaqiq).*

[7] *Maraaqi al-Falah is an exclusive book on the Hanafi School of jurisprudence.*

[8] *Something usual, typical, or standard.*

land to another person, i.e., it is important to ensure that land and water management is sustainable.

The play covers the legal aspects of the distribution of river or stream water flowing through the territory of two or more villages or tribes. It is noteworthy that the following points in the 8th passage of the *al-Hidayah*, *"Water Use Chapter"*, are directly related to this subject: or in the 9th passage, *"Along with the canal, one of the user partners may prohibit the other from constructing a network and other equipment to be constructed to obtain water. If these devices are in the builder's possession and are not harmful to others, they cannot be banned"*.

The passages of *Al-Hidayah* aimed at resolving a possible dispute over water use between a group of people are also noteworthy. *"If a group of people disputes among themselves over the share of water in a common canal, their share in the water is equal to the amount of their land"*.

In addition, healthy water bodies offer many ecosystem benefits. It reduces vulnerability to the effects of climate change and other natural disasters such as nutrient cycle, carbon storage, erosion or sediment control, biodiversity enhancement, soil formation, wildlife conservation, water conservation, and filtration.

However, the management of water bodies for human health and well-being requires the ability to move from conventional reductionist approaches to more integrated methods. Understanding these complex relationships depends on changes in land use and the links between hydrological systems, ecosystems, and human health. Also, the political aspects of water management and all this are related to socio-economic development. Such ideologies and relationships can be expanded to examine the links between natural resource management, rural and community development, and public and environmental health.

As has been observed in land use, the natural-historical species formed over the centuries in the use of water has amazed researchers with its economy, non-causing environmental problems, and economic efficiency.

If we give a scientific definition of water basin management, it is the process of organizing and managing the land, water, and other natural resources used in water bodies to meet the relevant requirements while mitigating the impact on soil and water resources. This includes the socio-economic, human-institutional, and biophysical interrelationships between soil, water, and land use, as well as the relationship between upstream and downstream areas.

By the end of the twentieth century, population growth in many areas had led to increased restrictions on the availability of land, water, and other natural resources. Lack of freshwater supply, pollution of agricultural lands, and polluted rivers have affected the lives of millions of people. Currently, almost half of the world's countries have low or very low levels of freshwater. The importance of mismanagement of the watershed can be seen in the history of the Aral Sea basin.[9]

From the above examples and considerations, it can be seen that the landscape and geographical features of the land are fully taken into account in the use of land and water. We can see that an ethnoecological culture based on water saving has been formed and passed down from generation to generation, meeting the needs of the local population for water. For a long time, this situation has laid the foundation for the sustainable development of subsistence farming in the country, improving the welfare of the population.

The history of water use in agriculture in the Fergana Valley is well studied. In the Fergana Valley, there are more than 6,500 small rivers and streams that can be used for irrigation, and the main areas are irrigated by canals and ditches drawn from them. In addition, due to the hydrogeological features of the above ethnolandscape regions, there are also areas where groundwater is used (springs, wells, ditches).

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[9] *Aladin and Potts 1992; Glantz 1999; Cai, etc.*

Picture 1. Fergana Valley: Water resources.

"Water is a basic production resource for agriculture. Competition for scarce water resources has been recognized as a potential source of international conflict. In the case of the Ferghana Valley, despite the very local character of the conflicts, the presence of international borders/or the implication of communities belonging to another ethnic group has loaded the conflict with a transborder and/or ethnic dimension. Earlier studies have shown that water availability and access to water, water quality, rising groundwater and waterlogging are the three main water-related issues in the Ferghana Valley».

Source: [Environment and Security: Central Asia-Ferghana/Osh/Khujand Area]

The total number of irrigation systems in the Fergana Valley is 31, and the number of large main canals was in 1949. The largest irrigation systems in the valley, the Isfara River, have 90 canals, 98 from the *Sukh River*, 100 from the *Shokhimardonsoy*, 177 from the *Aravonsoy*, 199 from the *Boyistan* system, and 201 from the *Yangiarik* system. Russian and foreign scientists, who first encountered such a complex irrigation system, have repeatedly said that they admire the culture of water use of our people.

Formed over the centuries, considering the natural-climatic, relief, soil ecological, and demographic conditions of the place, the Russian government has almost no involvement in this irrigation system. V.I. Masalsky[10] writes about it: *"It was not necessary to intervene in this new, unfamiliar area, and all water use was left to the local population*". A.F. Middendorf[11], on the other hand, was deeply acquainted with the traditions of irrigated agriculture in the Fergana region and highly valued it, and wrote to the Europeans, *"... we must learn this work from the peoples of the East"*.

V. Radloff[12], a German scientist who has studied the irrigation system in our country, is amazed by the irrigation systems of the regions and writes that the locals, *who do not have technical and hydraulic knowledge, do it based on experience passed down from generation to generation*. Indeed, even the most knowledgeable engineers would not have been able to easily understand the reason for this.

Suggestions and feedbacks

To successfully develop and implement an integrated watershed management strategy in a variety of contexts, there must be clear science-based goals and objectives that address all elements of the

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[10] *Masalsky Volodymyr Ivanovych Либідь, м. Київ, Україна.*

[11] *Aleksandr Fyodorovich Middendorf; 18 August 1815 – 24 January 1894)*

[12] *Vasily Vasilievich Radlov or Friedrich Wilhelm Radloff was a German-born Russian founder of Turkology, a scientific study of Turkic peoples.*

watershed and the temporal changes considering the needs and opinions of the population.

Lack of tools for interagency communication and cooperation and the development and application of sustainable water management It can be difficult to achieve coordination of cooperation and management strategies due to water bodies, which cover many regional and international jurisdictions.

This system needs to be improved so that decision-makers have the information they need and can properly analyze the data with interested people/institutions to study the watershed and develop the most appropriate management strategies. can cooperate for.

It is necessary to consider public opinion and ensure the positive participation of the public in the management of water bodies. Often, the community or key stakeholders in the watershed are less involved and do not encourage collaboration between different agencies.

Given that water bodies can also be located within each other, it is necessary to determine the extent to which integrated management of the water body should be organized. In particular, the management of water bodies in the territory of two states or along the border may require many measures.

It should be borne in mind that changes due to climate change can have a significant impact on the environmental and socio-economic components of watershed management. It is recommended to develop measures with a sufficient scientific basis in this regard.

In addition, working with the GIS[13] is an important tool for managing water bodies. This is because GIS is a convenient tool for assessing water basin conditions by modeling the impact of human activities, as well as for visualizing the impact of alternative management scenarios. These modeling and visualization skills provide an understanding of the processes and dynamics that shape the physical, biological, and chemical environment of water bodies.

The inclusion of GIS in hydrological simulation models produces more spatial detail than other hydrological models and results in the ability to analyze the combination of slope, aspect, and hydrological response units in the simulation.

GIS's high-quality results, easy-to-update capabilities, and ability to test management capabilities make it a useful tool in providing management information to decision-makers.

Conclusion

In summary, integrated water basin management is the process of creating and implementing plans, programs, and projects to maintain and improve water basin functions that provide the goods, services, and values needed by a community affected by water boundary conditions. Management is integrated and complex, including both man-made and natural factors within and outside the watershed (e.g., upstream, middle stream, downstream).

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