

WATER SECURITY: CONCEPT AND EVOLUTION

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Received: 04/2024, Published: 05/2024

Abstract :

The study aims to illuminate the concept of water security by exploring its significance, definition, determinants, and its interplay with other security paradigms. It also seeks to pinpoint and analyze the primary challenges confronting water security. The research problem posed includes inquiries into why water security has gained increasing importance over time, how its definition has evolved, and its connections to related concepts.

Key findings underscore the pervasive impact of water across various domains of life. Water security is identified as an essential component of social, economic, environmental, and health security. Attaining national security hinges on achieving economic security, which in turn relies on food security. Securing an adequate water supply is imperative for achieving food security. Moreover, the study highlights the intrinsic link between water security and both economic and political autonomy.

Key words: water security; National Security; food security.

1-INTRODUCTION :

Water is a vital resource for human survival and economic development, yet it is increasingly under threat due to various factors, including climate change, population growth, urbanization, and pollution. Water security is a concept that has evolved over time to address these challenges and ensure a reliable and sustainable supply of clean water for all.

The field of international studies has seen developments in terms of interests and positions. Since the early 1990s, literature in international relations and strategic studies have focused on redefining certain concepts, including "security". Thus, anchoring security and promoting development have become imperatives for all countries, and the concept of water security has become one of the components of national security. With recent economic, social, and political developments, the importance of researching and studying the issue of water security has been highlighted in many regions of the world, where water security has become a major concern for both governments and populations, fearing imminent water-related dangers.

- **StudyProblem:**

The issue of water security is particularly important in regions experiencing conflicts over international river waters. Water security is now considered an integral component of this new global concept of human security, to the extent that the lack of conducive conditions for achieving water security necessarily hinders or leads to the absence of human security.

Due to the relative scarcity of water, it has always been both a source of opportunities and risks. In many regions of the world, water security has become a major concern for both governments and populations, due to imminent water-related dangers. The term "water security" raises strategic, political, technical, security, and legal questions, especially in our time, where it has forcefully asserted itself.

- **The following questions are raised:**

1. Why has the importance of water security increased over time?
2. How has the concept of water security evolved?
3. What is the relationship between water security and related concepts?



- **Study Importance:**

The importance of the study stems from the fact that water is a crucial element in human life. Without it, neither humans, animals, plants, nor material existence would be possible. Water security has gained significant attention from researchers and scholars worldwide, as water is a vital and strategic resource for national security. This is especially true as demand for this resource grows to achieve development, food security, and energy security. While water is considered a renewable resource, it is also scarce, leading to intense competition for access to water sources and international rivers. Since the early 1990s, there has been a shift towards viewing water conflicts as one of the sources of conflict between countries, particularly in the post-Cold War era. Additionally, water security has become a topic of interest for politicians, stakeholders, and researchers in water affairs, given its paramount importance as an essential and indispensable element.

2-THE IMPORTANCE OF WATER SECURITY :

Water security is a critical concern that affects numerous facets of human existence, encompassing health, agriculture, industry, and the environment. Its significance lies in the fact that water is indispensable for sustaining life, and its scarcity or pollution can result in dire outcomes, including disease outbreaks, food insecurity, and economic setbacks.

- **Natural significance:**

Water resources are the essential lifeblood for all beings on the planet, particularly in arid and desert lands where their absence or scarcity is keenly felt. Water security mitigates desertification and protects the ecosystem, agricultural lands from erosion, thereby safeguarding biodiversity from degradation and extinction. It also reduces youth migration to urban areas and abroad (Morsi, 2012, p. 17) .

- **Economic importance:**

Water constitutes a natural resource and wealth among the assets crucial for economic and social development. It is the foundation of life and a prerequisite for investing in all other natural elements, serving as a pillar of civilization and urban concentration.

Therefore, water security stabilizes populations in their cities and villages, ensuring employment opportunities, investment in agricultural lands, and food security. It aids in implementing development programs, enhances planning effectiveness, and reduces disparities between regions economically and socially.

Water holds particular significance for the agriculture and industry sectors, serving as a unique resource in biological processes. It plays a crucial role in many industries such as steel, paper, and sugar production, capable of generating new wealth by increasing agricultural production and achieving food security. Moreover, providing clean freshwater is essential for maintaining public health, while clean water contributes to environmental renewal.

Additionally, water-related economic activities facilitate international navigation and rapid transit at minimal costs (others, 1996, p. 91).

- **Politic importance:**

The significance of water resources has always been and continues to be a fundamental factor in the strength and prosperity of nations. As long as the distribution of these resources remains unequal worldwide, disparities between nations will persist, and aspirations for control will endure. Nations possessing natural resources must employ various means to protect themselves from external invasion. To achieve this, they must harness their natural resources for development, play a peaceful role in a world marked by tensions, and address water scarcity issues that have led to several political crises among countries sharing the same river. Disputes primarily arise between upstream and downstream countries due to political differences, preventing them from reaching a satisfactory formula or method for equitable water utilization. Consequently, water has become a tool for political pressure, with riparian states using it against each other. When a river is shared by multiple countries, water scarcity becomes an international issue due to conflicting interests in its use. Water scarcity exacerbates tensions and conflicts between nations, with some studies suggesting that future wars may be fought over water resources, replacing oil as a primary catalyst



for conflict. On the other hand, water plays a vital role in positively influencing international relations by fostering cooperation between countries and contributing to food security, self-sufficiency, and agricultural, industrial, and service-based localization. Thus, water can be considered a double-edged sword, shaping the foreign policy of nations (Alfadl, 2009, p. 63).

Other importances:

-Water security is a critical concern that affects various facets of human existence, including health, agriculture, industry, and the environment. Its significance lies in the fact that water is essential for life, and its scarcity or contamination can result in serious repercussions such as disease outbreaks, food insecurity, and economic downturns.

-In the context of climate change, water security becomes even more crucial as disruptions to the water cycle lead to more frequent and severe droughts, floods, and other water-related disasters. The climate crisis exacerbates existing challenges like water scarcity, pollution, and over-extraction while introducing new ones such as sea-level rise and saltwater intrusion.

-The link between water security and food security is undeniable, given that agriculture is a major consumer of water resources. Maintaining water security is vital for sustaining food production, especially in regions prone to water scarcity or drought. Furthermore, water security is essential for supporting economic development across various industries including energy production, manufacturing, and mining (Ardo, 2022).

-Preserving the environment and biodiversity also hinges on water security. Healthy ecosystems like wetlands, rivers, and lakes play crucial roles in regulating water supplies, filtering pollutants, and supporting biodiversity. Protecting these ecosystems is essential for maintaining their services.

-Despite its importance, progress towards achieving water security is slow. By 2030, global freshwater demand is projected to exceed supply by 40%, with an estimated 1.6 billion people lacking safely managed drinking water. Currently, 4 billion people live in water-scarce areas, and one in four cities faces water insecurity.

-Addressing these challenges requires urgent global action, coordinated across all sectors and institutions. Enhancing climate resilience, promoting sustainable water use, and fostering inclusion are essential for supporting development and ensuring equitable access to water resources. These efforts necessitate partnerships, policies, and financing.

In conclusion, water security is fundamental for human well-being, food production, economic prosperity, environmental preservation, and climate resilience. Achieving water security demands immediate and concerted global efforts to ensure a water-secure world for all (Megta, 2021).

As mentioned earlier, it's clear that water plays an essential role in all aspects of life, indispensable for all living beings given its diverse applications. Furthermore, rivers hold significant importance for countries due to their varied economic, industrial, and social uses.

The political, strategic, and economic importance of water will continue to grow globally in the coming decades. Therefore, water isn't just about sustenance; it serves as the foundation for industrial development, economic growth, social and political stability, and cultural advancement across all fields.

3-THE CONCEPT OF WATER SECURITY AND ITS EVOLUTION:

Despite the antiquity of this concept, there is still divergence in how it is perceived by water issue scholars, with various definitions ranging from simplicity to complexity or from theoretical abstraction to procedural inclination. The literature on water encompasses a wide array of definitions for the concept of water security, and here we present prominent examples of these definitions, focusing on the common key elements that constitute the concept of water security.

Before delving into the concept of water security, it is essential to discuss the concept of security, which is one of the most prevalent terms, particularly in contemporary times, used across various fields including politics, military, economics, and social sciences.

- **Definition of Security:**

Despite the utmost importance of the concept of security and its widespread usage, it is a relatively modern concept in political science. This modernity has led to some ambiguity, which poses several challenges. On one hand, the term "security" might not be the best expression for



expressing the national security of contemporary states. On the other hand, the concept has not been crystallized enough to become a scientific subject within political science that can be subjected to theoretical knowledge.

Security is the opposite of fear; it signifies tranquility, stability, and freedom from the fear of danger, whether internal or external. In jurisprudence, security means defending the nation, its beliefs, symbols, principles, values, heritage, and territory. Security undoubtedly relies on strength as the desired objective. The term "security" has been used with various concepts and connotations in Arab heritage. Based on the foregoing, security can be defined as: "A state in which members of society feel stability and tranquility commensurate with refraining from actions prohibited by the laws and regulations of that society (Al-Tahir, 1993, p. 17)

- **The link between water security and water scarcity:**

The concept of linking water security to water scarcity revolves around ensuring the adequacy and continuity of water resources to meet various needs over time and space. Water security, as an overarching concept, entails meeting diverse water requirements while ensuring sustainability through the protection and efficient utilization of available water resources. This involves developing tools and methods for sustainable water use, as well as enhancing existing water sources and exploring new ones, whether traditional or non-traditional.

On the other hand, water insecurity arises from water scarcity, which may result from climatic, geographic, or economic factors. It can stem from unsustainable consumption, excessive exploitation, or economic constraints that hinder access to available water resources. Additionally, water insecurity can be exacerbated by inadequate infrastructure or societal vulnerabilities, which impede access to water sources or result from pollution or natural contamination (Mahmoud, 2011, p. 34).

4-WATER SECURITY AND RELATED CONCEPTS :

In formulating the concept of water security, it is necessary to adjust the compound terms of the terminology alongside other interrelated concepts. Recently, the use of specialized security terminology has become widespread. Terms such as food security, national security, military security, water security, interfaith security, social security, economic security, cultural security, and national security have been used extensively, signifying each requirement of comprehensive human security. Water security is linked to health security, food security, economic security, the absence of water conflicts, achieving stability, and avoiding wars. The 2006 Human Development Report warned of a water crisis that could lead to a devastating war between countries sharing rivers and water sources, as well as an increase in deaths due to water scarcity or pollution.

Focusing on the relationship between environmental security and food security, water security and national security, water security and human security, and then water security and the water balance. (Conant, 2005, pp. 03-05)

- **Environmental Security and Food Security :**

The issue of water security is inseparable from other critical issues such as food security. The escalating competition for limited water resources puts the capabilities of developing countries to provide food for their growing populations under severe challenges. The desperate attempts to achieve food self-sufficiency lead to excessive use of water in agricultural activities.

The importance of food security, like all other aspects of security, if not more, is of utmost concern in a world where the significant increase in the global population is evident throughout history. The world has witnessed numerous famines because agricultural production was not sufficient to meet the needs of the population. In addition, the prices of food and agricultural products have soared to levels beyond an individual's ability to afford, leading to malnutrition, weakened health, and the emergence of diseases. Therefore, food security depends on the extent of individual self-sufficiency in food (Didouh, 2017, p. 36).

- **Water Security and national security :**

National security, German, and national security refer to national security as securing the state entity from internal and external threats, securing its interests, and creating suitable conditions to achieve its national objectives and goals. The concept of national security revolves around key



axes, which include securing the state's entity in the unity of its territories protecting its territory, and achieving the general objectives of society, usually represented in political and social stability and comprehensive development.

The depletion of water resources and the increasing demand for them led to the proliferation of conflicts among countries bordering transboundary rivers, or what is known as international rivers. About 40% of the world's population lives in areas where international rivers are shared. Rivers such as the Nile and the Euphrates have become sources of concern at both regional and international levels. Therefore, control over water has become one of the key goals sought by countries, linked to economic programs, political objectives, and national interests. Thus, the issue has become a resource crisis, focusing on how to utilize it, which can be summarized in the crises of water and food security, as part of economic security (Ali, 2000, p. 60).

Often, the ambitions of countries for the water resources of neighboring countries trigger political crises that may ignite wars, and conflicts between countries over water sharing increase in areas suffering from water scarcity (research, 2015, p. 15).

- **Water security and human security**

The concept of human security generally involves ensuring protection against events that disrupt human life and livelihoods. Undoubtedly, water is one of the most impactful resources on human security. As a productive resource, water is a crucial factor in sustaining livelihoods. Ensuring water availability, both as a productive input and protection against risks associated with uncertainty in water flows, is a key component of human security in general and national security in particular (report, 2006, p. 133).

Water security, or water safety, is considered an integral part of this comprehensive concept of human security. The lack of suitable conditions to achieve water security thus hinders the realization of human security. The Human Development Report of 2006 defines human security as the availability of protection against unpredictable events that disrupt human life and livelihoods. Likewise, water security, or water safety, is an integral part of this new and comprehensive concept of human security. The absence of suitable conditions to achieve water security consequently hinders the realization of human security (report H. d., 2006, p. 03).

CONCLUSION :

from the foregoing discussion, we discern the immense significance of water as an essential element indispensable for all living organisms, given its diverse uses ranging from drinking to various other purposes. Additionally, the utmost importance of water is evident, as it is crucial for various societal needs.

Rivers at the national level face diverse uses across all economic, industrial, social, and other sectors. Water also plays a strategic role in distribution processes, as upstream countries may use it as a weapon against downstream countries in the absence of established agreements. This has driven countries to enter into bilateral treaties for water allocation. Additionally, water plays a role in achieving food security, self-sufficiency, and contributes to agricultural, industrial, and service sector localization.

Therefore, the political, strategic, and economic role of water will increase in the coming decades globally. Thus, water concerns are not solely related to sustenance, although they are an inevitable necessity for all living beings. They also form the fundamental basis for industrial development, economic growth, social and political stability, and cultural progress in various fields. The definition of water security expands as water affects all human activities, constituting an integral part of social, economic, environmental, and health security.

Water security refers to the availability of water in suitable quantity and quality to maintain health, livelihoods, ecosystems, and production, accompanied by an acceptable level of risks associated with water for people, ecosystems, and economies. While there are multiple definitions of water security and various perspectives on the topic, there are common elements among them. The essence of water security lies in ensuring the availability of sufficient quantities of water of good quality to meet all societal needs across all human and economic sectors sustainably.



Hence, water security is no less important than any other security aspect. In fact, water security surpasses all others due to the limited possibilities of securing additional food needs through various agricultural and industrial means. This limitation arises from the finite nature of fresh water sources, unlike energy, for example, which has several alternatives.

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