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WATER SCARCITY' MITIGATION REFORMS: A COMPREHENSIVE APPROACH

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Summary': Water scarcity is a pressing global issue that threatens human health,, economic prosperity, and environmental stability To address this challenge, comprehensive reforms are essential, encompassing a wide range of measures to reduce water demand, increase supply, and improve water management practices. Water scarcity poses a significant challenge to sustainable development worldwide. This article explores comprehensive reforms to mitigate water scarcity , examining research findings, discussing key strategies, and providing actionable advice.

Keywords: Water scarcity, mitigation reforms, water conservation, water management, sustainable development

INTRODUCTION

Water is the source of life. Its value is becoming more and more evident in the process of world globalization. Water scarcity poses a significant challenge globally, impacting communities, economies and ecosystems. The issue of water scarcity is complex, influenced by factors such as population growth, climate change, and poor water resource management [1]. Drought and desertification are increasing annually, resulting in the loss of 12 million hectares of land and affecting poor communities around the world[2, 89]. Water is life, which for millions of years has had an incomparable impact on the evolution of life, the environment and climate change. Therefore, mankind should protect it as the apple of its eye reforms to mitigate the effects of water scarcity. According to the World Health Organization [3], one in three people globally (or one-third of the world's population) does not have access to safe drinking water. Also, regarding inequalities in access to water, sanitation, and hygiene (WASH), more than half of the world does not have access to safe sanitation services. Some 2.2 billion people around the world do not have safely managed drinking water services, 4.2 billion people do not have safely managed sanitation services, and 3 billion people lack basic hand-washing facilities. "Children and their families in poor and rural communities are most at risk of being left behind. Governments must invest in their communities if we are going to bridge these economic and geographic divides and deliver this essential human right," said Kelly Ann Naylor, Associate Director of WASH. UNICEF[4]. To address this challenge, comprehensive reforms are essential, encompassing a wide range of measures to reduce water demand, increase supply, and improve water management practices.

RESEARCH METHODS

This article draws upon a comprehensive review of scientific literature, policy documents, and case studies related to water scarcity mitigation. The analysis includes quantitative data on water consumption patterns, supply availability-, and the effectiveness of various mitigation strategies.

Water management

Water management is the control and movement of water resources to minimize damage to life and property- and to maximize efficient beneficial use. Good water management of dams and levees reduces the risk of harm due to flooding Irrigation water management systems make the most efficient use of limited water supplies for agriculture [5]

Managing the water assets of many countries around the world is a challenge due to immense difficulties and vulnerabilities, rapid industrialization and urbanization processes, and the effects of environmental changes, including global warming and climate change, as well as population's growth and geopolitical instabilities The increase in water stress and shortages facing many countries

worldwide is one of the main difficulties confronting practical progress globally [6] According to FAO's Director-General—Jose Graziano da Silva—this challenge will increase as the global population swells and as environmental changes continue to rise[~]

Water scarcity mitigation reforms

Water scarcity has become a pressing global issue, threatening human health, economic prosperity, and environmental stability- To address this challenge, comprehensive reforms are essential, encompassing a wide range of measures to reduce water demand, increase supply, and improve water management practices. It should be noted that the demand and need for water is growing more than ever. As a result, water scarcity is observed all over the world.

Competition for water will escalate more than ever, as the world's total population is projected to reach 8.6 billion by 2030 and 9.8 billion by 2050 [8] It means that an additional 2.4 billion people are projected to be added to the global population between 2015 and 2050. whereas Africa will be the major contributor On the other hand, the global water demand is projected to increase by 55% between 2000 and 2050[9] The Central Asian region is also affected by this urgent issue. According to experts' calculations, by 2050, water resources are expected to decrease by 5% in the Syr Darya basin and by 15% in the Amu Darya basin On the other hand, due to population growth, water demand in Uzbekistan will increase to 7 billion cubic meters by 2030, and this figure may double by 2050. Systematic measures are being implemented in the country to ensure efficient use of water resources, wide introduction of water-saving technologies in crop cultivation and then state support, as well as improvement of reclamation condition of irrigated lands. As a result of these measures, to date, the area covered by water-saving technologies accounts for about 25 percent of irrigated areas, and due to this. 3 billion cubic meters of water were saved and used for irrigation of 830 thousand hectares of re-cropped areas in 2022

Taking this into account, water resources utilization has been radically reformed in our country in recent years. The main issue is rational and efficient water use aimed at improving reclamation of irrigated lands

In 2023, the main directions for improving the efficiency of existing water resources were identified as:

- utilization of existing water resources with strict distribution among water consumers;
- strengthening state support for the introduction of water-saving technologies;
- reducing water losses in irrigation systems;
- increasing transparency of payments by optimizing the cost of water delivery to the farmer's field,
- introduction of modern information and communication technologies in water resources management. [10].

Therefore, in the pre-election program of the President special attention was paid to water saving and by 2030 all irrigated crop areas in our republic should be transferred to water saving technologies and it is determined that measures will be taken to further strengthen incentive mechanisms for farmers. In particular, in total for 2017-2023 - 1-2 million water saving technologies have been introduced on 1 ha, i.e. about 31% of agricultural arable land It includes such technologies as drip, sprinkler, discrete irrigation, flexible pipe, film irrigation, during these years 630 thousand hectares of land were leveled by laser leveling.[11]

Within the framework of the strategy- "Uzbekistan - 2030"2. in the field of saving water resources and protecting the environment, it is envisaged to introduce a mechanism for suspending financing, lending and other financial transactions for facilities for which a positive conclusion of environmental expertise has not been received. [12]

RESULTS

The research reveals that water scarcity mitigation requires a multi-faceted approach, including

Demand Management: Implementing water-efficient technologies; promoting behavioral change; and reducing agricultural water use.

Supply Augmentation: Exploring alternative water sources such as desalination, wastewater

treatment and rainwater harvesting

Water Management Reforms: Improving water infrastructure., optimizing distribution systems, and implementing water pricing mechanisms to incentivize conservation.

DISCUSSION

The effectiveness of water scarcity mitigation reforms depends on several factors, including:

Political Will: Strong government support and public engagement are crucial for successful implementation.

Economic Viability: Mitigation strategies should be cost-effective and accessible to all sectors of society

Technological Innovation: Advancements in water-efficient technologies and alternative water sources can significantly enhance mitigation efforts.

CONCLUSION

Water scarcity mitigation requires a comprehensive and collaborative approach. By implementing demand management., supply augmentation, water management reforms, and other measures, we can safeguard water resources for future generations and ensure sustainable development. In short, water scarcity is a global problem. Under such conditions in Uzbekistan, as in many countries of the world, important measures related to the rational use of water resources are being implemented. After all, the widespread introduction of water -saving technologies not only reduces water consumption, but also becomes an important element of the transition to a green economy.

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Rezyume: Suv tanqisi inson salomatligi, iqtisodiy farovonligi va atrof-muhit barqarorligiga tahdid saladigan dolzarb, global muammodir. Ushbu muammom hal qilish uchun

keng qamrovli islohotlar zarur bo'lib, ular suvga bo'lgan ehtiyojni, ta'minorni qisqartirish uchun keng ko'lamli chora-tadbirlarni o'z ichiga oladi amaliyodarlarga. Suv tanqisligi butun dunyo bo'ylab barqaror rivojlanish uchun jiddiy muammo tug'diradi. Ushbu maqolada suv tanqisligini yumshatish, tadqiqot natijalarini o'rganish, asosiy strategiyalarni muhokama qilish va mumkin bo'lgan harakatlarni ta'minlash bo'yicha kengqamrovli islohotlar o'rganiladi.

Резюме: Дефицит воды является актуальной глобальной проблемой, которая угрожает здоровью человека, экономическому процветанию и экологической стабильности. Настолько, что выступает в этом случае, и в той мере, что и надо, и в целом, в целом, в целом, в то время Нинт. Дефицит воды представляет собой серьезную проблему для устойчивого развития во всем мире. В этой статье, рассматриваются комплексные реформы по смягчению дефицита воды, анализируются результаты исследований, обсуждаются ключевые стратегии и даются практические советы.

Kalit so'zlar: Suv tanqisligi kamaytirish islohotlari, suvni tejash, suvni boshqarish, barqaror rivojlanish

Ключевые слова: нехватка воды, реформы по смягчению последствий, водосбережение, управление водными ресурсами, устойчивое развитие