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The Role of International Aid and Cooperation in Strengthening Water Management Capacity in Afghanistan

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Abstract:

Afghanistan's water sector faces serious challenges due to protracted conflicts, climate change, weak institutional capacities, inadequate infrastructure, and limited financial resources. These challenges have reduced the country's ability to effectively manage its water resources and have affected the process of sustainable development. Therefore, the purpose of this study is to assess the role of international assistance and cooperation in strengthening Afghanistan's water management capacities. The study was conducted based on a qualitative method and used thematic and descriptive analysis methods. Data were collected through relevant academic articles, reports, and semi-structured interviews with 50 experts related to water management, international development, and international relations. The study was conducted based on the theoretical framework of international development to assess the impact of foreign assistance and cooperation on the development of Afghanistan's water sector. The findings of the study show that international aid and cooperation have played a significant role in strengthening Afghanistan's water management capacities through financial support, technical assistance, infrastructure development, technology transfer, and capacity-building programs. Also, based on the thematic analysis, five main themes emerged: water management problems and needs, key areas of international cooperation, the impact of international aid, barriers to cooperation, and alternative solutions for sustainable water management. However, political instability, security problems, weak coordination between relevant institutions, lack of local ownership, and weak long-term planning are still considered important obstacles to the effectiveness of international aid. The study recommends that coordination between international donors, development agencies, and national institutions be strengthened, sustainable funding mechanisms be established, technical capacity-building programs be prioritized, and regional cooperation for the management of shared water resources be expanded. These measures can play an effective role in promoting good water governance, climate change resilience, and sustainable water management and development in Afghanistan.

Keywords: International Aid, International Cooperation, Water Management Capacity, Sustainable Development, Capacity Building.

1. INTRODUCTION

Water is a fundamental resource for human life, economic growth, agricultural production, public health, and environmental sustainability. In many countries around the world, effective water management is considered a key prerequisite for sustainable development, food security, and resilience to climate change. Afghanistan, which has significant water resources, faces many challenges in managing these resources effectively. Most of the country's water is

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supplied by precipitation and snowmelt, but water management capacities have not been developed sufficiently due to long-standing conflicts, political instability, weak institutions, and limited technical capabilities. Over the past two decades, Afghanistan's water sector has experienced significant progress in infrastructure construction, capacity building, technical support, and financial assistance through international assistance and cooperation. However, water resource mismanagement, climate change impacts, droughts, floods, lack of information, water governance issues, and management of shared border rivers remain significant challenges for the country. These problems have not only affected the agriculture and energy sectors, but have also created obstacles to social stability, economic development, and regional cooperation. Although various international organizations, donor agencies, and development partners have provided extensive assistance to strengthen Afghanistan's water sector, there has been limited academic research on the effectiveness of this assistance, its contribution to capacity building, and how it has produced sustainable results. Therefore, there is a need to scientifically and analytically examine the role of international assistance and cooperation in strengthening Afghanistan's water management capacities. The main objective of this study is to assess the role of international assistance and cooperation in building water management capacities in Afghanistan and to identify the opportunities and constraints that exist for sustainable water management. In addition, the study attempts to analyze the impact of financial assistance, technical support, capacity building, and regional cooperation in the field of water management. The main question of this study is: How can international assistance and cooperation strengthen water management capacities in Afghanistan and play an effective role in the process of sustainable water management and development? The answer to this question will help policymakers, international donors, development agencies, and relevant water sector institutions to develop better strategies and mechanisms for the effective and sustainable management of Afghanistan's water resources.

2. LITERATURE REVIEW

2.1 Structural and Systematic Challenges to Afghanistan's Water Management

Afghanistan's water problem is not just a water scarcity issue, but an interconnected issue of governance, infrastructure, climate change, and regional politics. Bose et al. (2024) argue that Afghanistan has an annual renewable water resource of about 75 billion cubic meters, but lacks the necessary infrastructure and technical capacity to manage these resources. At the same time, Moorthy and Bibi (2023) show that per capita water availability has been steadily declining since 1990, reflecting population growth and climate pressures. However, a significant weakness of the existing studies is that most studies focus on the physical aspects of water scarcity, while weaknesses in water governance and management have been largely ignored. For example, Asghar et al. (2023) describes the problems of drinking water and sanitation, but does not explain why, after two decades of international assistance, basic water services have not reached a large part of the population. This suggests that the problem lies not only in the scarcity of resources, but also in weak governance, policy and implementation. Furthermore, Hessami (2023) discusses the link between water and regional conflicts, but his claim that a large part of the conflict in Afghanistan is related to water still needs extensive empirical evidence. Therefore,

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the relationship between water and security should be assessed in the light of multifaceted social and political factors, rather than a direct cause-and-effect relationship.

2.2 International Assistance; Opportunity or Continuing Dependence?

The literature generally considers international assistance to be essential for strengthening water management. Ubaydullaeva (2023) argues that international organizations have a key role to play in water sector development through financial assistance, technical capacity building, and exchange of experiences. Similarly, Koculu and Topcu (2024) believe that international cooperation is vital for climate resilience, regional stability, and shared water management. However, there are also critical debates about the effectiveness of aid. Kausar et al. (2022) show that in many developing countries, foreign-funded programs are not sustainable due to lack of local ownership and short-term funding. In the case of Afghanistan, the experience of the 2001–2021 period also shows that despite the large volume of international assistance, the water sector has not become fundamentally self-sufficient. This situation raises the question of whether international assistance has actually led to capacity building, or has it only increased the reliance of institutions on external resources? Based on this discussion, the success of international assistance should not only be measured by the number of dams, canals, and projects built, but also by the level of independent capacity building of national institutions.

2.3 Capacity Building; a Key Prerequisite for Sustainable Water Management

Contemporary literature on water management increasingly considers capacity building to be more important than building physical infrastructure. Shams and Muhammad (2022) argue that sustainable management is possible when technical skills, managerial capabilities, and financial sustainability are combined. Mahaqi (2021) also considers knowledge sharing, local training programs, and information networks as important elements of capacity building. However, existing research on Afghanistan focuses mostly on infrastructure and is limited in its assessment of the impact of human capacity development. This gap is particularly noticeable in the area of building the skills of water management professionals, local institutions, and communities. Therefore, it is not yet clear which type of international assistance has been most effective in terms of capacity building.

2.4 SDGs, climate change, and water governance

The relationship between SDG-6, SDG-13, and SDG-15 has been extensively explored in the international water management literature. WaterAid (2017) and Herrera (2019) argue that the provision of clean water and sanitation is a fundamental indicator of sustainable development. At the same time, Morshed et al. (2023) highlight the importance of water infrastructure and early warning systems for resilience to climate change. However, the literature on the implementation of the SDGs in Afghanistan has remained largely conceptual. Existing research does not clarify how international assistance has led to practical changes in national policies and institutions to achieve the SDGs (Akhtar, 2024). Therefore, there is still a need to explore the practical relationship between international cooperation and the SDGs.

2.5 The post-2021 situation and the new reality of water management

Hanifi (2024) argues that Afghanistan's water sector has faced new challenges since 2021, as a large part of international donors have either withdrawn or reduced their assistance. At



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the same time, Cullen (2022) and Akhtar & Naizi (2025) argue that humanitarian aid cannot replace development aid, as humanitarian aid generally pursues short-term goals. On the other hand, some researchers believe that the current situation could also provide new opportunities for regional cooperation, especially in the management of shared rivers (Hessami, 2023; Akhtar et al., 2025). However, there is still insufficient empirical evidence to confirm this hypothesis.

A critical review of the literature reveals that previous studies have largely focused on the general impacts of Afghanistan's water resources, climate change, regional relations, and international assistance. However, it is still unclear how international assistance and cooperation have practically impacted Afghanistan's water management capacity, what barriers limit the effectiveness of this assistance, and what mechanisms can lead to long-term sustainability. Therefore, the current study fills this gap by drawing on the perspectives of experts in water management, international relations, and development affairs, and in-depth assesses the role of international cooperation in building Afghanistan's water management capacity.

3. RESEARCH METHODOLOGY

Research Design: This study was conducted using a qualitative research method and a descriptive-interpretive research design was used. The choice of qualitative research was considered appropriate because it enabled an in-depth assessment of the opinions, experiences, and perspectives of experts on the role of international assistance and cooperation in strengthening Afghanistan's water management capacities.

Theoretical Framework: The study is based on the theoretical framework of International Development Theory. This framework explains how international assistance, technical cooperation, and capacity building can contribute to solving the fundamental problems of developing countries and strengthening institutions. According to this theory, the effects of international cooperation on strengthening Afghanistan's water management capacities were assessed.

Data Collection: Document Review and Semi-Structured Interviews were used to collect data. In the first phase, academic articles, reports, and policy documents related to water management, international development, climate change, and international cooperation were reviewed. In the second phase, semi-structured interviews were conducted with 50 experts.

Sampling Method: Participants were selected through purposive sampling. The selection criterion was that participants should have sufficient academic or professional experience in the field of water management, international relations, development studies, or water-related projects. These experts were selected from universities, government agencies, international organizations, and non-governmental organizations.

Interview Process: The interviews were conducted based on a semi-structured interview guide. The main interview questions were about Afghanistan's water management problems, the effectiveness of international assistance, capacity building needs, regional cooperation, and future opportunities. With the participants' consent, the interview notes and recorded data were saved for analysis.

Data Analysis: The collected data were analyzed through thematic analysis. Using the thematic analysis steps of Braun and Clarke (2006), the data were first read several times, then initial codes were created, similar concepts were organized into categories, and finally the main



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themes were extracted. The data from the documents and interviews were compared to confirm and complement each other.

Reliability and Trustworthiness: To increase the reliability of the study, the data triangulation technique was used, in which the findings of the interviews were compared with information from scientific articles and reports. In addition, data review and continuous comparison were carried out to accurately reflect the views of the participants.

Ethical Considerations: The principles of research ethics were observed in this study. Consent was obtained from all participants before the interview began and they were assured that their personal information and identity would be kept confidential. The purpose of the study and how the data would be used were also explained to the participants.

4. RESULTS

Data collected from semi-structured interviews with 50 experts were analyzed through thematic analysis. Five main themes emerged from the analysis: (1) Afghanistan's water management challenges and needs, (2) key areas for international cooperation, (3) impacts of international cooperation, (4) barriers to international cooperation, and (5) alternative perspectives and opportunities for sustainable water management.

4.1 *Afghanistan's water management challenges and needs*

The analysis of the interviews showed that participants did not view Afghanistan's water management challenges as simply a water scarcity issue, but rather as a multifaceted managerial, technical, and environmental crisis. Three sub-themes emerged from the analysis of participants' perspectives: Weak information and monitoring systems; Aging and inadequate infrastructure; Impacts of climate change and the security situation. Participants repeatedly mentioned that the lack of accurate information on water has affected policy-making and decision-making. In their opinion, the lack of reliable information on water resources, consumption and quality is a fundamental management problem. Participant (P3) said: "We still do not have a systematic and national database on water resources, because many decisions are made based on estimates." Participants also identified traditional irrigation systems, old canals and dilapidated infrastructure as important causes of water waste. Participant (P5) explained: "Most of the water is lost due to old canals and substandard networks before it reaches agricultural lands." The theme of climate change was also repeated in almost all interviews. Participants believed that droughts, irregular rainfall and floods have further complicated the problems of water management.

4.2 *Key Areas of International Cooperation*

The data analysis shows that participants consider international cooperation as an important opportunity to strengthen Afghanistan's water sector, but do not consider the value of assistance to be limited to financial support. According to participants' views, four sub-areas were most frequently repeated: Development of infrastructure; Capacity building; Exchange of knowledge and experience; Transfer of new technology. According to participants, international assistance has played an important role in the development of dams, canals, and irrigation systems. Participant (19) said: "The biggest need is still infrastructure, because the capacity to store and regulate water is limited in our country." However, the analysis of the interviews showed that participants emphasized the development of human capacities more than physical

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infrastructure. Participant (25) said: “Even if we build modern dams, but do not have professional cadres, these projects will not have sustainable results.” These findings indicate that participants consider capacity building to be the most important element of international cooperation.

4.3 Impact of international cooperation

The analysis of the interviews shows that participants see the impact of international cooperation in three main areas: Improvement of water and health services; Increase in agricultural production; Strengthening social and economic stability. Participants believed that international assistance had increased access to clean water for some areas. Participant (31) said: “In areas where international projects have been implemented, water quality and the health status of the people have improved.” In the agricultural sector, many participants also considered the improvement of irrigation systems to be an important factor in increasing yields. Another important finding from the analysis was that participants considered international cooperation not only as a technical tool, but also as a means of strengthening social stability and regional relations.

4.4 Barriers to International Cooperation

While participants acknowledged the importance of international cooperation, the analysis of the interviews showed that several barriers limit the effectiveness of this cooperation. Five sub-barriers emerged from the data analysis: Political instability; Security problems; Weak coordination; Corruption; Limited technical capacity. Participant (14) stated: “Many projects are delayed and fail to achieve their goals due to security problems.” Participant (35) described the problem of coordination as follows: “Sometimes international institutions, government agencies, and local communities work separately, which leads to a waste of resources.” According to the analysis, weak coordination was a recurring issue across almost all themes.

4.5 Alternative perspectives and opportunities for sustainable water management

The last theme is specific to the perspectives that participants presented on the future of Afghanistan’s water sector. Four sub-themes emerged from the analysis of the interviews: Strengthening community ownership; raising public awareness; using technology; Local cooperation. Participants believed that water management is not only the responsibility of the government and international organizations, but also requires active participation of local communities. Participant (29) said: “Until people feel ownership of water resources, no project will be sustainable.” Participants also identified cooperation with neighboring countries on shared rivers as an important opportunity for the future.

The results of the thematic analysis show that Afghanistan’s water management challenges (Theme 1) create the need for international cooperation (Theme 2). International cooperation has positive impacts on various aspects of the water sector (Theme 3), but political, security, and administrative obstacles limit the full realization of these impacts (Theme 4). Therefore, participants emphasize the importance of sustainable solutions, local ownership, and regional cooperation (Theme 5). Together, these five themes present an interconnected and interdependent picture of capacity building for water management in Afghanistan.

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5. DISCUSSION

The findings of this study indicate that Afghanistan's water management challenges are not simply technical or natural, but are deeply intertwined with institutional, governance, regional relations, and international cooperation. Interview analysis revealed that participants identified a lack of information, weak institutions, aging infrastructure, and the impacts of climate change as key factors behind water management challenges. This finding is consistent with studies by Bose et al. (2024), Asghar et al. (2023), and Moorthy and Bibi (2023), who also attribute the challenges in Afghanistan's water sector to weaknesses in management and governance rather than to the scarcity of physical resources. However, an important feature of the current study is that participants viewed the water problem largely from a capacity-building perspective. While most previous studies have focused on the construction of dams, canals, and infrastructure, participants in this study argued that weak human and institutional capacities are the main obstacles to sustainable development in the water sector. This finding is consistent with Shams and Muhammad (2022) who argue that sustainable management is impossible without strengthening human capacities and institutions. Findings on international cooperation indicate that international aid has played a positive role in strengthening the water sector in Afghanistan. This finding is consistent with studies by Ubaydullaeva (2023) and Koculu and Topcu (2024), who find international cooperation important for water governance, technical assistance, and climate resilience. However, the findings of the current study do not focus solely on the benefits of aid, but also highlight its limitations. Participants consistently noted that the impact of some international projects has been limited by a lack of local ownership, poor coordination, and short-term funding. This finding is consistent with Kausar et al. (2022) argues that the sustainable impact of foreign aid cannot be ensured without local ownership and institutional strengthening. Another important finding of this study is the importance of regional cooperation. Participants emphasized that a significant part of Afghanistan's water resources are linked to shared river basins, so cooperation with neighboring countries is vital for water management. This finding is consistent with Hessami's (2023) view of water-sharing agreements as a means of reducing conflict and enhancing regional stability. However, participants in the current study did not stop at signing agreements alone, but also highlighted the need for trust-building, information sharing, and the establishment of joint technical committees. This is an aspect that is rarely seen in many previous studies. The state of Afghanistan's water sector after 2021 also plays an important role in the findings of this study. Participants indicated that the decline in international aid and political changes have negatively affected the sustainability of water development projects. This finding is consistent with the research of Hanifi (2024) and Cullen (2022). However, the data from the current study also show that the decline in international aid has highlighted the need for the development of regional cooperation and local initiatives. From the perspective of the theoretical framework of international development, the findings of this study confirm that international aid and cooperation can play an important role in strengthening institutional capacities. However, the findings also show that financial aid alone cannot guarantee sustainable development. Capacity building, local ownership, effective governance, and sustained regional cooperation are elements that are linked to the success of international aid. Therefore, the theory of international development alone cannot explain the entire reality of the Afghan water sector, but must be used in conjunction with the theories of governance and regional cooperation.

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Overall, the findings of this study confirm many of the arguments of previous studies, but at the same time demonstrate that the real need for Afghanistan's water sector is not just the construction of new infrastructure, but also capacity building, local ownership, institutional reforms, and sustained regional cooperation. This result provides an important complementary perspective to the existing literature and provides valuable information for future water management policies.

6. CONCLUSION

The purpose of this study was to assess the role of international assistance and cooperation in strengthening water management capacities in Afghanistan. Findings based on thematic analysis of qualitative data revealed that Afghanistan faces multiple challenges in water management, the most important of which are lack of information, weak infrastructure, climate change impacts, weak institutions, and governance issues. These challenges have limited the effective management of water resources and have affected the country's sustainable development process. The study findings show that international assistance and cooperation have played a significant role in strengthening the water sector in Afghanistan. Financial support, technical assistance, capacity building programs, knowledge exchange, and technology transfer were important elements that, according to the participants, have helped improve water management capacities. Furthermore, the findings revealed that the impact of international cooperation is not limited to building infrastructure, but also plays an important role in strengthening human and institutional capacities. However, the study found that political instability, security challenges, weak inter-agency coordination, limited technical capacities, and lack of local ownership are major obstacles to the effectiveness of international cooperation. According to the participants, sustainable development in water management is possible only when international assistance is aligned with local needs, national priorities, and long-term capacity-building programs. This study makes an important addition to the existing literature that the water management challenge in Afghanistan is not simply a matter of physical infrastructure or financial resources, but is deeply linked to the need for capacity building, effective governance, regional cooperation, and institutional reforms. Therefore, strengthening Afghanistan's water management capacities should be pursued through joint efforts of international cooperation, national institutions, and local communities to ensure sustainable management of water resources and the long-term development of the country.

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