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Exploring the Impact of Social Marketing Campaigns on Water Conservation for Sustainable Development: A Case Study of Algerian Ministry of Water Resources Facebook Page

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Abstract:

Water scarcity is a pressing global issue that threatens sustainable development. Social marketing campaigns plays a key role in promoting water conservation behaviors. This study examines the impact of social media campaigns on water conservation efforts, using the Algerian Ministry of Water Resources Facebook page as a case study. A content analysis of the Ministry's Facebook posts was conducted to evaluate the messaging and engagement strategies employed. Surveys and interviews with the campaign audience provided insights into their perceptions, attitudes, and behaviors related to water conservation. The results demonstrate the effectiveness of social media in raising awareness, changing attitudes, and encouraging sustainable water usage practices. Key advantages of using social media for government campaigns include the ability to reach large and diverse audiences, foster community involvement, and gather valuable data on public sentiment. The findings highlight the importance of integrating social marketing principles into water conservation strategies to support long-term environmental, social, and economic goals.

Keywords: Ministry of Water Resources, social marketing, sustainable development, water conservation

Résumé :

La rareté de l'eau est un problème mondial urgent qui menace le développement durable. Les campagnes de marketing social jouent un rôle clé dans la promotion des comportements de conservation de l'eau. Cette étude examine l'impact des campagnes sur les réseaux sociaux sur les efforts de conservation de l'eau, en utilisant la page Facebook du Ministère des Ressources en Eau

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algérien comme étude de cas. Une analyse de contenu des publications sur la page Facebook du Ministère a été réalisée pour évaluer les stratégies de communication et d'engagement employées. Des enquêtes et des entretiens avec le public de la campagne ont fourni des informations sur leurs perceptions, attitudes et comportements liés à la conservation de l'eau. Les résultats démontrent l'efficacité des réseaux sociaux pour sensibiliser, changer les attitudes et encourager des pratiques d'utilisation durable de l'eau. Les principaux avantages de l'utilisation des réseaux sociaux pour les campagnes gouvernementales incluent la capacité d'atteindre un large public diversifié, de favoriser l'implication communautaire et de recueillir des données précieuses sur l'opinion publique. Les conclusions soulignent l'importance d'intégrer les principes du marketing social dans les stratégies de conservation de l'eau pour soutenir les objectifs environnementaux, sociaux et économiques à long terme.

Mots clés : Ministère des Ressources en Eau, Marketing social, Développement durable, Conservation de l'eau,

Introduction

Water is one of the most vital resources on our planet, essential for sustaining life, economic development, and environmental health. However, the world is facing a growing crisis of water scarcity that threatens the well-being of millions of people and the ecosystems they depend on. Water conservation has become an urgent priority as populations grow, climate change impacts water availability, and demand for water intensifies (Boretti & Rosa, 2019).

The research paper explores the impact of social marketing campaigns on water conservation efforts for sustainable development, using a case study of the Algerian Ministry of Water Resources Facebook page. The study aims to assess the effectiveness of social media campaigns in promoting water conservation behaviors and highlight the advantages of using digital platforms for government-led initiatives. It begins by providing context on the importance of water conservation and the global water scarcity issues. It emphasizes the role of sustainable water management in supporting economic growth, social well-being, and environmental health.

The methodological approach involves a case study of the Algerian Ministry of Water Resources Facebook page. Content analysis of the Ministry's Facebook posts was conducted to evaluate the messaging and engagement strategies employed. Surveys and interviews with the campaign audience provided insights into their perceptions, attitudes, and behaviors related to water conservation.

The findings demonstrate the effectiveness of social media in raising awareness, changing attitudes, and encouraging sustainable water usage practices. Key advantages of using social media for government campaigns include the ability to reach large and diverse audiences, foster community involvement, and gather

valuable data on public sentiment. It concludes by highlighting the importance of integrating social marketing principles into water conservation strategies to support long-term environmental, social, and economic goals.

1. Context and Importance of Water Conservation

Water conservation is a multifaceted endeavor that encompasses a range of strategies and practices aimed at managing the usage and quality of water to ensure its availability for present and future generations. This involves not only the reduction of waste and enhancement of efficiency in water use but also the preservation and restoration of natural water systems. Effective water conservation is crucial for sustaining life, fostering economic growth, and protecting our natural environment (Gleick, 2018).

1.1 Global Water Scarcity Issues

Water scarcity is a pressing global issue affecting every continent. Currently, over two billion people live in countries experiencing high water stress, and this number is expected to rise (Mekonnen & Hoekstra, 2016). Factors contributing to water scarcity include population growth, increased agricultural and industrial demand, pollution, and inefficient water use. Climate change exacerbates these challenges by altering precipitation patterns, causing more frequent and severe droughts, and reducing the reliability of water sources. The United Nations predicts that by 2025, half of the world's population could be living in water-stressed areas (United Nations, 2020).

The impacts of water scarcity are profound and far-reaching. In many developing regions, lack of access to clean water limits economic growth, contributes to poverty, and results in serious health issues due to waterborne diseases. In more developed regions, water scarcity can lead to conflicts over resources, reduced agricultural output, and higher costs for water-intensive industries. Environmental impacts include the degradation of aquatic ecosystems, loss of biodiversity, and diminished resilience of natural habitats (Vörösmarty et al., 2010).

1.2 Role of Sustainable Water Management in Development

Sustainable water management is crucial for addressing water scarcity and ensuring that this vital resource is available for future generations. It involves managing water resources in a way that meets current demands without compromising the ability of natural ecosystems to provide for future needs. This includes the implementation of efficient water use practices, protection of water quality,

restoration of degraded ecosystems, and the equitable distribution of water resources (Hoekstra & Mekonnen, 2012).

Investing in sustainable water management has multiple benefits for development. Economically, it can boost agricultural productivity by ensuring reliable irrigation, support industrial processes, and reduce the costs associated with water scarcity and treatment. Socially, access to clean water improves public health, reduces the burden on women and children who often collect water, and promotes social equity. Environmentally, sustainable water management helps preserve natural ecosystems, maintains biodiversity, and enhances the resilience of communities to climate change (Gleick, 2018).

In conclusion, water conservation is not just an environmental issue but a critical component of sustainable development. Addressing global water scarcity through sustainable water management practices is essential for economic growth, social well-being, and environmental health. As the world continues to grapple with increasing water demands and the impacts of climate change, the importance of conserving and managing water resources sustainably cannot be overstated.

2. Social Marketing and Sustainable Development

This section discusses the definition of social marketing and its importance in promoting sustainable behaviors. By understanding these concepts, the effectiveness of social marketing campaigns in driving positive change and supporting sustainable development goals is better appreciated.

2.1 Definition of Social Marketing

Social marketing is the application of commercial marketing principles and techniques to influence behaviors that benefit individuals and communities for the greater social good. It integrates research-based strategies to promote public awareness, change behaviors, and achieve specific health, environmental, and social outcomes. Social marketing campaigns often use a combination of media channels, partnerships, and community engagement to reach target audiences and encourage sustainable practices (Lee & Kotler, 2019).

2.2 Importance of Social Marketing in Promoting Sustainable Behaviors

Social marketing plays a critical role in promoting sustainable behaviors by raising awareness of environmental issues, changing attitudes, and encouraging responsible actions. Effective social marketing campaigns can drive significant changes in public behavior, such as reducing water and energy consumption, increasing recycling rates, and promoting the use of sustainable products and services. By influencing individual and collective behaviors, social marketing helps

build a culture of sustainability that supports long-term environmental, social, and economic goals (McKenzie-Mohr, 2011).

In the context of water conservation, social marketing can be instrumental in educating the public about the importance of saving water, demonstrating practical ways to reduce water usage, and fostering a sense of shared responsibility for preserving this precious resource. Campaigns that highlight the impact of water scarcity and the benefits of conservation practices can motivate people to adopt more sustainable habits and support policies that promote water sustainability (Andreasen, 2006).

Conclusively, social marketing is a powerful tool for driving behavior change and promoting sustainable development. By effectively communicating the importance of environmental stewardship and encouraging sustainable actions, social marketing campaigns can contribute to the preservation of natural resources, the improvement of public health, and the advancement of social equity. As we face increasing environmental challenges, the role of social marketing in fostering a sustainable future becomes ever more crucial.

3. Case Study Overview

This section delves into the specific use of the Algerian Ministry of Water Resources Facebook page as a tool for promoting water conservation. It also highlights the broader relevance of analyzing social media campaigns in the context of water conservation efforts. By exploring these topics, insights into the effectiveness and impact of digital communication strategies on sustainable water management are provided.

3.1 The Algerian Ministry of Water Resources Facebook Page

The Algerian Ministry of Water Resources Facebook page is a prominent platform used to communicate with the public about water conservation initiatives. It features a range of content, including educational posts, policy updates, interactive campaigns, and user engagement activities. This page is selected as the case study because of its extensive use of social media marketing techniques aimed at influencing public behavior towards sustainable water usage. The platform's active user base and consistent content updates provide a robust dataset for analysis (Abbas & Hammoudi, 2019).

Strategically, the Algerian Ministry of Water Resources has utilized its Facebook page to disseminate information and engage the public in water conservation efforts. This platform serves as a central communication tool, allowing the Ministry

to reach a broad audience with messages about water-saving practices, policy updates, and educational content on the importance of water sustainability. By leveraging social media, the Ministry fosters a more informed and proactive citizenry regarding water resource management (Abbas & Hammoudi, 2019). The interactive nature of Facebook enables the Ministry to engage with users directly, receive feedback, and adjust its campaigns to better meet public needs and preferences.

3.2 Relevance of Studying Social Media Campaigns in Water Conservation

Studying social media campaigns in water conservation is increasingly relevant in today's digital age. Social media platforms like Facebook offer a powerful avenue for public engagement and education, making them ideal for promoting sustainable behaviors. These platforms can amplify messages quickly and effectively, reaching diverse demographics and encouraging community participation in conservation efforts (Lovejoy & Saxton, 2012). Analyzing the effectiveness of these campaigns provides valuable insights into how digital communication strategies can be optimized to foster sustainable water use. Moreover, understanding the role of social media in environmental advocacy helps policymakers and organizations design more impactful and targeted campaigns (Miller & Lammas, 2010).

3.3 Role of Social Media in Modern Marketing

Social media has become an integral part of modern marketing strategies, providing businesses and organizations with powerful tools to reach and engage with their target audiences. Platforms like Facebook, Twitter, Instagram, and LinkedIn offer unique opportunities for brands to create and share content, interact with consumers, and build community. Social media allows for real-time communication, personalized marketing, and data-driven insights, making it an essential component of any comprehensive marketing plan (Kaplan & Haenlein, 2010). The ability to leverage user-generated content, viral trends, and influencer partnerships further amplifies the reach and impact of marketing efforts (Tuten & Solomon, 2017).

3.4 Advantages of Using Social Media for Government Campaigns

Governments increasingly use social media to disseminate information, engage with citizens, and promote public policies and initiatives. Social media platforms provide a cost-effective and efficient way to reach large and diverse audiences, making them ideal for public awareness campaigns. For government campaigns, social media offers several advantages, including the ability to quickly distribute critical information, gather public feedback, and foster community involvement (Mergel, 2013). Additionally, social media analytics provide valuable data on

public sentiment and campaign performance, enabling governments to refine their strategies and enhance their communication efforts (Kavanaugh et al., 2012).

4. Methodological Approach

This section discusses the research design and data collection methods employed in the study. It provides a justification for choosing a case study approach and describes the Algerian Ministry of Water Resources Facebook page as the focal point. Additionally, it details the methods used to gather and analyze data, including content analysis of social media posts and surveys and interviews with campaign audiences.

4.1 Research Design

A case study approach is chosen for this research due to its ability to provide an in-depth understanding of the complex phenomena within real-life contexts. This method is particularly suitable for examining the intricate dynamics of social media campaigns and their impact on water conservation behaviors. Case studies allow for a detailed examination of specific instances, offering rich insights that can inform broader generalizations and theories (Yin, 2018). The Algerian Ministry of Water Resources Facebook page serves as an ideal case due to its active engagement in promoting water conservation and the availability of diverse and comprehensive data.

4.2 Data Collection Methods

A content analysis is employed to systematically evaluate the social media posts on the Ministry's Facebook page. This method involves coding and categorizing posts to identify themes, patterns, and trends in the messaging and engagement strategies used. By analyzing the content, insights into the effectiveness of different types of posts and the overall impact of the campaign can be gained (Krippendorff, 2018). This approach helps to quantify the reach and engagement levels of various posts, providing a clear picture of the campaign's digital footprint.

Furthermore, surveys and interviews were conducted with the audience of the campaign to gather qualitative and quantitative data on their perceptions, attitudes, and behaviors related to water conservation. Surveys provide a broad understanding of the audience's responses and behaviors, while interviews offer deeper insights into individual experiences and motivations (Creswell & Creswell, 2018). This combination of methods allows for a comprehensive analysis of how the campaign influences public attitudes and actions, highlighting the strengths and areas for improvement in the social media strategy.

5. Data Analysis and Discussion

5.1 Media types of posts

Table 1. Summary of media types of post from1st April to 30th May 2024.

Content types of posts	Frequency	Percentage
Picture	**30**	**66,66**
Video	**10**	**22,22**
Graphic creation	**1**	**2,22**
Livestream	**4**	**8,88**
Total	**45**	**100**

There were also four typical media types that Algerian ministry of water sources used to create their Social Marketing Campaigns on Water Conservation posts. Table 1 presents the total posts of each media type during the observation period. The table shows that all of Algerian ministry of water sources post are presented by four different media types. The most common type of media was picture accompanied with (text), with 45 posts. Second, videos were in more than quarter of the posts. Third, there were 4 posts with livestream. Lastly, a graphic creation was presented 1 time during the observation period.

5.2 The highest number of the type of user's engagement to the posts

Table 2: The highest number of user's engagement to the posts from 1st Apl to 30th May 2024

Type of user's engagement	Number	Date of post
Like and emojis	**2903**	**April 11th,2022**
Comment	**2202**	**April 26th, 2022**
Share	**427**	**April 11th,2022**

According to the table above, High Engagement on Likes is 2903, This high number of Likes and Emojis suggests that the content was well-received and resonated with the audience, encouraging them to express their approval. So, Comments Indicate Deeper Engagement**: The significant number of comments indicates that users were not only passive consumers of the content but also felt compelled to engage in conversation or provide feedback. This can be a positive sign of community engagement and interest in the topic.

Then, the Low Shares which is only 427, The relatively low number of shares may indicate that while users liked the content, they were less inclined to share it with

their own networks. This could suggest that the content may not have been perceived as share-worthy or that it was more personal in nature.

Overall, the data indicates a strong level of engagement, particularly in terms of Likes and Comments. The content appears to have successfully captured the audience's attention, leading to a high volume of interactions. However, the low share count suggests an area for improvement, as increasing shares could help broaden the reach of the content. Future strategies could focus on creating more shareable content or encouraging users to share posts actively.

5.3 The topics involved in the posts of Algerian ministry of water sources:

Table 3. The topic involved in posts from1st April to 30th May 2024.

Topic of posts	**Frequency**	**Percentage**
Weather fluctuations	**3**	**6,81**
Sanitation	**5**	**11,36**
Improve water distribution	**3**	**6,81**
Water filter	**3**	**6,81**
Completion of wells and dams	**4**	**9,09**
Agriculture sector	**4**	**9,09**
Drinkable water	**4**	**9,09**
Minister's activities	**14**	**31,81**
Protocols	**1**	**2,27**
Advertisements and announcements	**2**	**4,54**
Total	**44**	**100**

The table 3 shows that the more topics involved in the ministry of water resources Facebook page are about the minister's activities with 31.81% Then sanitation topic with 11,36% in the second place, and the Completion of wells and dams, Agriculture sector also drinkable water in the third position with 9.09%. where the third position occupied by Weather fluctuations, Improve water distribution and Water filter by 6.81%.

It means that the Facebook page primarily focuses on posting about the activities of a minister. In addition to these primary posts, the page also addresses topics related to sanitation as a secondary focus. Furthermore, it includes content on the

completion of wells and dams, agriculture sector developments, and issues related to drinkable water as a tertiary focus. This prioritization indicates the relative importance or frequency of these topics on the page. Therefore, the Facebook page was created to support the corporate website of the minister of water resources, where it focuses on ministry corporate image management and improve the e-reputation.

5.4 The water sources indicated in the posts of Algerian ministry of water sources:

Table 3. The water sources indicated in posts from1st April to 30th May 2024.

Water sources		**Frequency**	**Percentage**
Traditional sources	Surface water	**3**	**15,78**
	Underground water	**7**	**36,84**
	Rainwater	**1**	**5,26**
Non-Traditional sources	Water harvesting	**4**	**21,05**
	Reuse of used water	**4**	**21,05**
Total		**19**	**100**

Based on above result, the water sources indicated on the LinkedIn posts show that Both water harvesting and reuse of used water are equally represented, each making up 21.05% of the total mentions. This highlights a growing trend towards non-traditional methods of water sourcing, which may reflect an increasing awareness of sustainability and resource management.

About the Preference for Underground Water; The data indicates a strong preference for underground water as a primary source, which may be due to its reliability or availability in the region.

For the Emerging Non-Traditional Practices; The equal representation of water harvesting and reuse of used water suggests that these practices are gaining traction. This could be indicative of a shift towards more sustainable water management practices in the community.

The last source is the limited Use of Rainwater**: The low percentage of rainwater usage may suggest either a lack of infrastructure for rainwater harvesting or climatic conditions that do not favor significant rainwater collection.

The analysis of the water sources indicates a clear reliance on underground water while also showing a promising interest in non-traditional water sourcing methods. This could reflect broader trends in water management practices, emphasizing sustainability and resource conservation. Further investigation into the reasons behind the preferences for these sources and the potential barriers to utilizing rainwater could provide valuable insights for future water management strategies.

5.5 The economic importance of water wealth according to the post:

Table 4. The economic importance of water wealth according to the post from1st April to 30th May 2024.

The economic importance	**Frequency**	**Percentage**
The agricultural field	**8**	**6,81**
The industrial field	**6**	**11,36**
The field of energy	**0**	**6,81**
Total	**14**	**100**

The analyze the results presented in Table 4 regarding the economic importance of water wealth from April 1st to May 30th, 2024, show the following finding:

1.Dominance of Agricultural Field: The agricultural field has the highest frequency (8) and is the most significant area of economic importance attributed to water wealth, accounting for 57.14% of the total responses (8 out of 14). This suggests that respondents view water as crucial for agricultural activities, which is consistent with the understanding that water is essential for irrigation, livestock, and crop production.

2.Industrial Field: The industrial field has a frequency of 6, representing 42.86% of the responses. This indicates that water is also considered important for industrial processes, which may include manufacturing, cooling, and other water-dependent operations. However, it is less emphasized compared to agriculture.

3.Field of Energy: The field of energy received no responses (0), indicating that respondents do not perceive water as economically important in this sector during the specified period. This could suggest a lack of awareness or relevance of water resources in energy production, or it may reflect a specific context where water's role in energy (such as hydroelectric power) was not prioritized or considered.

The data indicates a clear prioritization of water wealth's economic importance in the agricultural sector, with a significant portion of respondents recognizing its critical role.

The industrial sector also holds importance but to a lesser extent. The absence of responses regarding the energy sector suggests a potential area for further investigation or education, as water is often a vital resource in energy production.

5.6 The dimensions of effective water governance according to the post:

The dimensions of effective water governance	**Frequency**	**Percentage**
Social dimension	**16**	**51,61**
Economic dimension	**9**	**29,03**
Political Dimension	**5**	**16,12**
Environmental Dimension	**1**	**3,22**
Total	**31**	**100**

The results indicate a strong emphasis on the social dimension of water governance, suggesting that stakeholders prioritize community involvement and social equity. So Economic factors are also significant but not as dominant, while political and environmental dimensions are viewed as less critical.

The low emphasis on the environmental dimension raises concerns about the potential neglect of sustainability in water governance strategies. This could warrant further investigation or a shift in focus to ensure that environmental considerations are adequately integrated into water governance frameworks.

Overall, the data highlights the need for a balanced approach that incorporates all dimensions of effective water governance, with particular attention to enhancing the environmental aspect.

5.7 The ministry of water sources objectives according to the posts:

The Ministry objectives	**Frequency**	**Percentage**
Invest in water sources	**16**	**51,61**
Developing water sources	**9**	**29,03**
Preserving surface and groundwater	**5**	**16,12**
Total	**31**	**100**

The data indicates a clear prioritization of objectives within the Ministry of Water Sources, with a strong inclination towards investing in water sources as the primary goal. And The focus on developing water sources also reflects a proactive approach to addressing water scarcity or quality issues. Also, the lower emphasis on preserving surface and groundwater may suggest a need for increased awareness or initiatives in this area, as preservation is vital for long-term sustainability.

In conclusion, the results highlight a strong focus on investment and development in water sources, while also indicating an opportunity to enhance efforts in preservation for a more holistic approach to water resource management.

5.8 The tools for achieving objectives according to the posts:

The tools for achieving objectives	Frequency	Percentage
Organizing water distribution	**11**	**36,66**
Conducting studies on irrigation and reclamation projects	**4**	**13,33**
Management, operation and maintenance of dams, reclamation and irrigation projects	**7**	**23,33**
Coordination with international, regional and Arab organizations and specialized non-governmental organizations	**5**	**16,66**
Raising public awareness of the importance of preserving water wealth	**3**	**10**
Total	**30**	**100**

The table presents data on the tools for achieving objectives related to water management, along with their frequency and percentage representation. Here's a detailed analysis of the results:

- ✓ Organizing Water Distribution: This tool is the most frequently mentioned, indicating that a significant portion of respondents (over one-third) prioritize organizing water distribution as a key strategy. This suggests that effective water distribution is seen as critical for achieving water management objectives.
- ✓ management, Operation, and Maintenance of Dams, Reclamation, and Irrigation Projects: his tool is the second most important, with nearly a

quarter of respondents highlighting its significance. It reflects the importance of maintaining existing infrastructure to ensure efficient water management.

- ✓ Coordination with International, Regional, and Arab Organizations and Specialized NGOs: This tool has a moderate level of support. The emphasis on coordination suggests that collaboration with external organizations is recognized as important for enhancing water management efforts, although it is less prioritized than the first two tools.

The analysis of the table indicates a clear prioritization of tools for achieving water management objectives. Organizing water distribution stands out as the most critical tool, followed by the management and maintenance of existing infrastructure. Coordination with external organizations is also valued, but less so than direct management strategies. The lower emphasis on conducting studies and raising public awareness suggests that these areas may require more attention and resources to enhance their effectiveness in achieving overall water management goals.

6. Conclusion

This section presents the findings from the analysis of the Algerian Ministry of Water Resources Facebook page, focusing on the effectiveness of its social marketing campaigns in promoting water conservation and supporting sustainable development goals. The results are organized according to the types of media utilized, levels of audience engagement, thematic priorities, and the overall impact of these campaigns on public awareness and behavior

1. **Media Utilization in Content Creation:** The analysis reveals that the most frequently used media type was pictures accompanied by text, appearing in 45 posts. Videos were also prominently featured, constituting more than a quarter of the posts. Livestreams were less common, with only 4 instances, and graphic creations were used just once during the observation period. This distribution suggests a strong preference for visual content, particularly static images paired with text, as a primary method for engaging the audience.
2. **Engagement Levels:** The data indicates a robust level of audience engagement, particularly in terms of Likes and Comments. The content effectively captured the audience's attention, resulting in a high volume of interactions. However, the low number of shares points to a potential area for improvement. Enhancing the shareability of content or actively

encouraging users to share posts could significantly expand the content's reach and impact.

3. **Focus of the Facebook Page:** The prioritization of topics on the Facebook page indicates a strategic focus on supporting the corporate website of the Ministry of Water Resources. The page is primarily used to manage the ministry's corporate image and improve its e-reputation. This suggests that the content is carefully curated to align with the ministry's broader communication and public relations objectives.
4. **Water Sourcing Preferences:** The analysis of water sourcing indicates a clear reliance on underground water, reflecting a significant trend in water management practices that emphasize sustainability and resource conservation. Additionally, there is a notable interest in non-traditional water sources, indicating a progressive approach to water sourcing. The underutilization of rainwater, however, suggests potential barriers or challenges that warrant further investigation to better understand and address these limitations.
5. **Economic Importance of Water in Sectors:** The findings show a strong recognition of the economic importance of water resources in the agricultural sector, with a significant portion of respondents acknowledging its critical role. The industrial sector is also valued but to a lesser extent. The absence of responses concerning the energy sector highlights a potential gap in understanding or education, given water's vital role in energy production. This gap presents an opportunity for further exploration and awareness-raising.
6. **Balanced Water Governance:** The data underscores the need for a balanced approach to water governance that considers all dimensions, with particular attention to enhancing the environmental aspect. This finding suggests that while current strategies may address certain areas effectively, a more holistic approach is required to ensure sustainable water management.
7. **Investment and Development Focus:** The results highlight a strong emphasis on investment and development in water sources, reflecting a proactive approach to expanding and improving water resources. However, the analysis also points to an opportunity to strengthen efforts in water preservation, suggesting that a more comprehensive strategy that includes

both development and conservation is needed for effective water resource management.

8. **Water Management Tools:** The analysis of the tools for achieving water management objectives shows a clear prioritization of organizing water distribution, which emerged as the most critical tool. This is followed by the management and maintenance of existing infrastructure. While coordination with external organizations is valued, it is considered less critical than direct management strategies. The lower emphasis on conducting studies and raising public awareness indicates areas that may require more attention and resources to enhance their effectiveness in achieving overall water management goals.

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