

RESEARCH ARTICLE		Strategic Dimensions of Environmental Communication: The Case of the Ministry of Environment and Quality of Life	
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Abstract			
<p>This article aims to analyze the strategic dimensions adopted by environmental communication within the Ministry of Environment and Quality of Life, through a quantitative analytical study targeting a sample of 45 participants. The data were analyzed based on indicators such as arithmetic means and standard deviations, in order to assess the effectiveness of environmental communication in achieving objectives such as public awareness, behavioral change, digital interaction, community participation, and environmental crisis management. The findings show the dominance of the awareness and behavioral dimensions, along with a significant presence of the digital component, while also revealing a relative weakness in activating participatory and preventive dimensions in the face of environmental risks.</p>			
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Introduction

The world has witnessed a significant escalation in transboundary environmental risks arising from diverse ecological systems, directly impacting human security and the rights of future generations. Despite numerous multilateral

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environmental initiatives and international efforts aimed at establishing the foundations of global environmental policies through major conferences on environment and sustainable development—beginning with the Stockholm Conference in 1972, followed by the conferences of 1987, 1992, 2000, 2002, 2012, 2015, and up to 2022—which have laid down the institutional and political frameworks for comprehensive environmental governance (Adi Ahmed Al-Faraji, 2015, p. 17), the state of the global environment remains unstable and is rapidly deteriorating in many aspects. This deterioration jeopardizes the environmental basis of human society. Consequently, some international agreements and frameworks have sought to address these issues more holistically by integrating political, economic, social, and environmental dimensions into public policies, while promoting sustainable development goals within the framework of what is known as **Environmental Governance**. This is exemplified by the **Paris Agreement on Climate Change**, a historic international treaty adopted on December 12, 2015, during the 21st session of the Conference of the Parties (COP21) in Paris, France, which entered into force on November 4, 2016. The agreement represents the first legally binding global accord aimed at combating climate change and mitigating its adverse effects. It emphasizes the importance of strengthening negotiation and mediation mechanisms to reduce environmental risks through diverse governance tools and mechanisms (Environmental Governance 06, 2022, p. 11).

The contributions of researcher Christine L. Oravec in the early 1980s in the United States mark a foundational starting point for environmental communication, adopting rhetorical and epistemological approaches to analyze public environmental discourses. Many scholars have linked this form of environmental discourse to United Nations reports and scientific studies that highlight the environmental crisis and sound the alarm regarding the growth model based on the excessive exploitation of nature and its resources without regard to the severe repercussions for humanity.

However, environmental discourse cannot be understood in isolation from its intellectual and philosophical contexts; rather, it intersects with the trajectory of **modernity critique** that emerged in the late 19th and early 20th centuries. The theses of key figures in this trajectory have influenced the redefinition of foundational concepts in environmental policies, prompting the international community to reconsider basic notions such as development and rights by incorporating the communication dimension into new approaches for formulating public environmental policies.

The modernity critique, beginning with Max Weber, warned against the dangers of prioritizing technology and quantitative logic over human and environmental values. As environmental thought evolved, it became necessary to rethink the rationality of Western modernity, which has led to intertwined environmental and social crises. Environmental communication relies on multiple approaches and diverse epistemological foundations to study its subjects—some suited for analyzing representations, attitudes, and behaviors toward the environment, and others dedicated to examining deep cognitive structures and their impact on the perception of environmental phenomena, such as the cognitive or developmental approaches, alongside communication models for development.

Researcher Robert W. Cox, one of the leading theorists in environmental communication, classified research domains in this field into seven main axes reflecting the diversity and intersection of communicative and environmental dimensions. These axes include: environmental discourse and rhetoric, which focuses on how messages and speeches about environmental issues are constructed; environmental media and journalism, emphasizing communication's role in shaping environmental awareness; public participation in environmental decision-making, highlighting the importance of community engagement in policy-making; green marketing as a means to encourage environmentally friendly consumption patterns; environmental cooperation and conflict resolution, which studies negotiation dynamics and alliances among various actors; environmental risk reporting; and representations of nature in environmental culture, analyzing symbols and cultural perceptions of nature and the environment. These axes provide a comprehensive framework for understanding the cognitive, cultural, and political dimensions of environmental communication within the context of contemporary environmental crises. Cox also discussed mechanisms of differentiation and intersection among these fields in terms of theoretical perspectives, epistemological questions, functions, and data analysis tools, considering environmental communication as an emerging field positioned within **interdisciplinary bridging methodologies**, intersecting communication, environmental sciences, politics, and sociology.

Accordingly, the issue of environmental communication, with its complex nature, involves intertwined ecological, political, institutional, and cultural dimensions practiced within the public sphere. Recent studies have focused on analyzing the roles played by environmental communication in constructing the environmental public sphere through sociological and political approaches.

Robert W. Cox views environmental communication as one of the institutional interaction systems for managing environmental crises and regards it as a central tool in reorganizing power within the environmental public sphere, especially amid environmental conflicts and competition over resources.

In this context, recent studies emphasize that environmental communication—with its tools of negotiation, mediation, and persuasion—has become indispensable for dealing with the increasing complexities of environmental decision-making. Environmental issues are no longer solely scientific or technical matters but have become political and negotiable subjects requiring citizen involvement and adherence to institutional state frameworks.

Hence, environmental communication plays a vital role in supporting decision-makers and guiding public opinion, thereby enhancing the effectiveness and sustainability of environmental policies.

1. Problematic and Research Questions

Based on the 2024 annual report issued by the National Economic and Environmental Council, the world is expected to witness strategic shifts in managing environmental issues, especially in light of climate change and the increasing environmental risks and crises. In this context, Algeria has identified priority axes within the “National Plan for the Advancement of Algeria Horizons 2023.”

This plan relies on an assessment by the National Observatory for Organizational Performance and Institutional Coordination of government sectors in Algeria, particularly concerning environmental communication mechanisms.

Current environmental challenges necessitate the integration of environmental communication strategies as a fundamental approach in formulating environmental policies. This integration enhances citizens’ awareness and contributes to changing individual and collective behaviors.

Adopting a comprehensive perspective on environmental policy governance requires strengthening cooperation among various stakeholders and incorporating environmental communication throughout all stages of planning, implementation, and evaluation to ensure the effectiveness of interventions and the achievement of sustainable development goals.

Accordingly, the central problematic of this paper can be formulated as follows:

What are the strategic dimensions of environmental communication in Algeria from the perspective of experts?

To clarify the problematic, the following research questions are posed:

- What are the main characteristics of environmental policies in Algeria?
- What dimensions define the environmental communication strategies adopted in Algerian environmental policy?

2. Study Methodology

Referring to the nature of the subject under study and in line with the presented problematic and research questions, our study is classified within descriptive studies, which are “linked to a contemporary phenomenon with the intention to describe and interpret it” [Atif Adly Al-Abd & Zaki Azmi, *Statistical Method and Its Uses in Public Opinion and Media Research* (Cairo: Dar Al-Fikr Al-Arabi, 1993), p. 207]. Descriptive studies “focus on interpreting the prominent aspects of any phenomenon and consider this their primary concern, since describing any phenomenon or event requires avoiding systematic biases and ensuring the credibility of the collected data” [Alan Laramie & Bernard Vallée, *Research in Communication: Methodological Elements*, translated by Miloud Seifari et al. (2nd ed.; Algiers: Diwan of University Publications, 2009), p. 239].

We adopted the descriptive approach to reveal the current facts of the studied phenomenon, document its indicators and characteristics, classify it, identify its correlation with other features, and provide a precise and comprehensive description of the phenomenon from all its aspects, formulating this description either quantitatively or qualitatively. This is demonstrated by the use of quantitative scientific methods to investigate environmental policies in Algeria and to understand how they adopt environmental communication strategies. In addition, qualitative interpretations are employed to uncover the meaning of quantitative results within the context of strategic dimensions.

Furthermore, we utilized the analytical method, as evidenced by the use of statistical analysis of data. In the applied section of this study, we employed the SPSS software for data processing and relied on the following statistical techniques:

- Cronbach's Alpha coefficient to test the reliability of the study instrument;
- Frequencies and percentages to present the characteristics of the sample and assess the level of agreement of respondents with the questionnaire statements;
- Arithmetic means to determine the trends of respondents' answers regarding environmental policies.

3. Data Collection Tools

To collect the necessary data for this study, we relied on a questionnaire designed to gather the maximum possible information required by the topic of environmental policies in Algeria, while adhering to methodological principles in its construction to obtain accurate and sufficient data covering various dimensions of the research problem.

The questionnaire development process involved several stages:

- First, benefiting from the theoretical background of the study and reviewing previous similar studies;
- Then, drafting the initial questions in alignment with the research problem;
- Submitting the draft for validation by a panel of specialized professors;
- Revising and finalizing the questionnaire based on their feedback.

The resulting questionnaire consists of two main sections:

- **Section One:** Environmental policies in Algeria;
- **Section Two:** Environmental communication strategies;

In addition to a section collecting personal and professional data such as gender and educational qualifications. The **Likert scale** was employed, consisting of five response options: strongly agree, agree, neutral, disagree, strongly disagree.

Psychometric Properties of the Questionnaire :

Validity Testing:

After constructing the initial version of the questionnaire, it was submitted to a group of professors for evaluation to ensure the face validity of its various sections and its appropriateness for measuring the intended constructs. Based on the reviewers' comments and observations, the questionnaire items were refined and reorganized to better suit the study's population and sample, resulting in modifications to the wording and sequencing of several statements.

Reliability Testing:

The questionnaire's reliability was assessed using **Cronbach's Alpha coefficient**, which yielded a value of **0.83**, as shown in the table below. This value indicates a good degree of internal consistency and reliability, which justified the acceptance and application of the questionnaire in the study.

Reliability Statistics	
Cronbach's Alpha	0.843
Number of Items	10

Source: Outputs from SPSS version 27

The test results show that the Cronbach's Alpha coefficient for the first section exceeds the threshold of 0.8, indicating the questionnaire's stability for this section.

Reliability Statistics	
Cronbach's Alpha	0.831
Number of Items	12

Source: Outputs from SPSS version 27

Similarly, the Cronbach's Alpha coefficient for the second section also exceeds 0.8, confirming the questionnaire's reliability in this section as well.

4. Sample

Since the current study targets the cadres and officials within the Ministry of Environment and Quality of Life, the study population consists of all officials in this ministry. Due to the large size of the research population, its diversity, and the variety of its characteristics, in addition to the desire to save effort and time, we resorted to **sampling**. Sampling is defined as “a method of collecting data and information from and about specific elements and cases selected by a particular method from all the units and the population of the study using various techniques.”

The nature of the study and the characteristics of the research population required us to adopt **purposive sampling**, which is defined as the method where the researcher freely selects the sample based on the premise that it fulfills the objectives of the study. In other words, the sample elements are deliberately chosen by the researcher because they possess certain characteristics not found in others [Rachida Sbiti, *previous reference*, p. 74]. Accordingly, the researcher selects individuals who share the key characteristics of the research population under study.

Given the use of some scientific and technical terms and to avoid ambiguity in the questionnaire items in case respondents had difficulty understanding certain questions, the questionnaire was distributed via **face-to-face interviews**.

Questionnaires were distributed to 50 officials from the Ministry of Environment and Quality of Life. Forty-five questionnaires were retrieved and deemed valid for analysis after excluding five questionnaires due to incomplete information or refusal by respondents to answer certain questions.

Therefore, the study sample consists of 45 units, which represents the number of respondents reached within the allocated time frame for questionnaire distribution.

5. Definition of Terms

– Strategic Dimensions:

Conceptual Definition:

These are the main aspects that constitute the general framework for strategic planning in any field. They include a set of factors and trends that influence the decision-making process to achieve long-term goals. Typically, these dimensions encompass the future vision, strategic objectives, available resources, potential challenges, and the means used to achieve success and sustainability across various domains such as security, governance, and sustainable development.

Operational Definition:

In this study, strategic dimensions refer to the three pillars from which the environmental communication strategy is derived, having a direct impact on its outputs and objectives. These are the developmental dimension, the rights-based dimension, and the security dimension.

– Environmental Communication:

Conceptual Definition:

Environmental communication is a type of communication that highlights all environmental issues from their onset rather than after they occur. It conveys to the public knowledge, concern, and awareness about their environment through a variety of communication channels and mass influence mechanisms.

Operational Definition:

In this study, environmental communication refers to the process of exchanging information and dialogue regarding environmental issues among various stakeholders, including governments, environmental organizations, media outlets, and society at large. It aims to raise awareness among individuals and institutions about environmental challenges, promote sustainable behaviors, and support environmental policies through media campaigns, awareness programs, and comprehensive dialogue on environmental topics. Environmental communication utilizes multiple tools such as environmental advertisements, scientific reports, social media, and educational activities to enhance awareness and community engagement in environmental protection.

6. Environmental Policies

Environmental policies represent a system of plans, legislations, and programs adopted by the relevant government authorities—primarily the Ministry of Environment and Quality of Life—with the aim of preserving natural resources, reducing pollution, and promoting the sustainability of ecosystems. These efforts contribute to improving human health and quality of life. Such policies include regulating waste management, improving the quality of air and water, preserving biodiversity, and raising environmental awareness while encouraging behavioral change among individuals towards the environment. This is achieved through the adoption of effective environmental communication strategies and the activation of community partnerships, ensuring a safe and healthy environment for current and future generations.

Environmental communication is a fundamental component of comprehensive environmental policy, not merely a media tool to announce pre-established policies. Its purpose is to build deep environmental awareness across different segments of society, enabling them to actively contribute to shaping environmental policies, monitoring their implementation, and evaluating their impact. Additionally, environmental communication prepares both the public and decision-makers to support environmental actions and measures by influencing individual attitudes and motivating them to treat natural resources as valuable assets that are not freely given but must be preserved and utilized rationally and sustainably.

a) Tools for Achieving the Objectives of the National Environmental Policy

- **Legislation and Laws:**

These must continuously evolve to keep pace with scientific progress and anticipate environmental degradation to avoid its consequences. Although these legislations impose strict restrictions on industrial, urban, productive, and developmental activities in general to ensure their compliance with environmental considerations, they remain ineffective unless supported by practical enforcement tools.

- **Financial Measures:**

These take the form of taxes and incentives. Taxes act as deterrent measures aimed at controlling production and consumption patterns and lifestyles that lead to environmental degradation. Incentives are encouraging measures that involve material support and tax facilities to promote alternative production, consumption, and development patterns that preserve the environment.

- **Communication and Education:**

Communication holds a central position in the integrated national environmental policy. Media channels have the ability to raise citizens' awareness of their environmental responsibilities and to create a solid base of support for measures aimed at environmental protection. Communication also fosters an open dialogue among different sectors of society concerning environmental issues, opening the door for interactive exchanges of ideas in various directions, thereby providing options for decision-makers. Communication campaigns help create responsible behavioral patterns by highlighting the positive impact that simple individual actions in daily life can have on the environment.

Communication is a key tool for achieving environmental policy objectives; however, it becomes effective only when integrated with other tools such as legislation, laws, incentives, and financial deterrents. Mere awareness of a problem does not always lead individuals to participate in solving it. The success of environmental measures at the general level is linked to the coherence and mutual reinforcement of these three tools in a connected cycle. Communication can facilitate convincing people of laws, laws can encourage acceptance of environmental messages, and incentives and financial deterrents contribute to better acceptance and effective enforcement of laws.

b) The Impact of International Conferences on Environmental Policy Making

As environmental protection became a shared responsibility among nations and a concern of the international community, and with increasing threats posed by pollution to human life on Earth, countries agreed on the necessity of serious steps to ensure the survival of both humans and the environment. This conviction materialized in concrete efforts through the signing of international agreements that set principles and rules aimed at regulating the exploitation of environmental resources and protecting them from pollution. This trend was embodied throughout the 20th century in a series of international conferences striving to halt pollution and find sustainable solutions to environmental protection, granting environmental issues an international dimension and making them a common concern for all humanity.

Despite the impact of international divisions and the Cold War conditions at the time, which limited the effectiveness of international organizations, continuous efforts and supportive stances led to the convening of the 1972 Stockholm Conference. This conference marked the fundamental starting point of international interest in environmental policies. It was followed by a series of international conferences calling for pollution reduction and finding solutions to protect the environment, including the Rio de Janeiro Conference, Kyoto, Johannesburg, Copenhagen in 2009, and Rio+20 in 2012.

The 1972 Stockholm Conference on Human Development marked the actual beginning of global environmental thinking and collective awareness of the necessity to protect and preserve the environment. This concern developed further in 1992 when the international community began searching for fundamental solutions by linking environment with sustainable development.

In 2002, the international community underwent a serious reevaluation of environmental issues, and by 2012 (Rio+20), the world was called upon not only to diagnose environmental challenges but also to assess efforts, think of effective future mechanisms, and rectify past mistakes.

International conferences have played a major and fundamental role in providing visions and solutions, contributing significantly to the protection of human environments across various sectors through the principles and recommendations issued. They also helped establish many legal frameworks that formed the foundation of international environmental law.

Despite all failures and setbacks in achieving the desired outcomes, the success of the United Nations in organizing, supervising, and monitoring these international conferences indicates the importance of environmental protection and the global concern for the risks threatening the future of the world, despite differing visions and strategies. Consequently, all countries were compelled to work on consolidating what international agreements called for, enhancing the collective interest of humanity, safeguarding the rights of future generations, and ensuring justice and equity among generations.

This chapter will provide an overview of the contents of the most prominent international conferences held from the late 20th century to the present, analyzing their resolutions, results, directions, and mechanisms, while briefly presenting their provisions as a basis for the research. It will also raise questions about their outcomes, especially regarding the inability of developing countries to showcase the results of their efforts in protecting development, consolidating sustainable development dimensions, the constraints faced, and the future and prospects of environmental protection.

c) Environmental Policies in Algeria

Table 1: Sample Attitudes Towards Environmental Policies in Algeria

Statements	Mean	Std. Dev.	Student's t-test	Sample Attitude	Rank
Algeria follows a strategy of informing the public about environmental policies	3.60	0.967	5.597	Agree	6
Announced environmental policies are clearly implemented	3.18	0.944	1.754	Neutral	10
There is alignment between the ministry's announced policies and actual programs	3.38	0.995	3.463	Agree	7

Statements	Mean	Std. Dev.	Student's t-test	Sample Attitude	Rank
The ministry confines communication to stakeholders in environmental policies	3.65	0.894	6.547	Agree	4
The ministry has an information system ensuring data quality	3.34	1.080	2.864	Agree	8
Guaranteeing stakeholders' access to environmental data	3.33	1.043	2.859	Agree	9
The ministry monitors and reviews environmental policies	3.77	0.821	8.474	Strongly Agree	1
The ministry integrates environmental communication strategies with environmental policies	3.68	0.844	7.324	Agree	2
Training stakeholders to achieve high levels of environmental awareness	3.63	1.000	5.742	Agree	5
Reliance on empowerment (Empotement) to achieve environmental sustainability goals	3.66	0.864	6.904	Agree	3

Source: Outputs of SPSS 27

Analysis of Results:

Based on the statistical results shown in the table, it appears that the sample's evaluation of the environmental communication strategy adopted by the ministry is generally positive. The arithmetic means of the statements ranged between **3.18** and **3.77**, indicating an overall "Agree" attitude towards the studied statements.

- The statement **"The ministry monitors and reviews environmental policies"** received the highest mean score (**3.77**) with a low standard deviation (**0.821**), indicating a high level of consensus among the respondents. This reflects a strong institutional commitment to the periodic evaluation of environmental policies.
- The statement **"The ministry integrates environmental communication strategies with environmental policies"** ranked second with a mean of **3.68** and a t-value of **7.324**, demonstrating good awareness among the sample of the importance of integration between communication and policy-making.
- Conversely, the statement **"Announced environmental policies are clearly implemented"** recorded the lowest mean (**3.18**) and the lowest t-value (**1.754**), suggesting neutrality or hesitation in evaluating the actual effectiveness of policy implementation. This highlights a need for greater transparency and clarification of implementation mechanisms.
- Statements related to the availability of environmental data to stakeholders scored relatively lower, ranking **9th out of 10**, indicating a need to improve open access to environmental information.

Overall, the results reflect a positive awareness of the importance of environmental communication among the ministry's officials. However, some areas require improvement, such as the clarity of policy implementation and ensuring access to environmental data, which would enhance the effectiveness of the current policies and encourage more active participation from stakeholders.

7. Strategic Dimensions of Environmental Communication

Environmental communication at the Ministry of Environment is considered a key strategic tool aimed at raising environmental awareness and promoting a culture of sustainability. This contributes to protecting natural resources and achieving sustainable development. This communication is based on a set of strategic dimensions that help achieve environmental goals and enhance interaction between the government and society.

a) Types of Strategic Dimensions of Environmental Communication :

- **Awareness and Educational Dimension**

This dimension is a priority, as the ministry seeks to spread environmental knowledge among citizens through media campaigns, awareness programs across various communication channels, and organizing seminars and workshops targeting educational institutions and companies. This dimension raises awareness about issues such as climate change, pollution, and biodiversity, fostering individual responsibility towards the environment.

- **Legal and Legislative Dimension**

Aims to inform citizens about the environmental legal framework and legislations in place, such as laws limiting pollution, protecting natural areas, and rationalizing resource consumption. The ministry works to enhance compliance with these laws by disseminating information and guidance that clarify their importance, thereby strengthening environmental commitment among individuals and institutions.

- **Incentive and Community Participation Dimension**

The ministry encourages individuals and organizations to adopt sustainable practices by involving them in environmental initiatives like tree planting campaigns, recycling, and rationalizing water and energy consumption. Companies are also motivated to implement environmental responsibility standards through partnership programs and cooperation with the private sector, which enhances the role of civil society in environmental protection.

- **Technological and Communication Dimension**

The ministry invests in modern technology to improve the effectiveness of environmental communication. This includes using digital communication tools, social media platforms, and smart applications to disseminate environmental information and engage with the public. It also provides open environmental data and interactive maps to increase transparency and ease of access to environmental information.

- **International and Regional Cooperation Dimension**

This dimension is reflected in strengthening cooperation with global and regional environmental organizations and participating in international agreements such as the Paris Climate Agreement. The ministry also exchanges experiences with other countries to develop more efficient environmental policies and ensure alignment of national strategies with global environmental goals.

Through these strategic dimensions, environmental communication at the Ministry of Environment contributes to achieving sustainable development and enhancing environmental awareness, thereby building a society that is more conscious of its environmental responsibilities and more capable of effectively and sustainably engaging with environmental issues.

b) Sample Attitudes toward the Strategic Dimensions of Environmental Communication at the Ministry of Environment and Quality of Life

Statements	Sample Size	Mean	Std. Deviation	Sample Attitude	Rank
The ministry publishes all information related to environmental communication through mass media.	45	3.75	0.751	Strongly Agree	9
The ministry shares environmental information with the public via social media networks.	45	3.93	0.843	Agree	3
The public interacts with environmental information on social media (forums, images, videos, etc.).	45	3.87	0.813	Strongly Agree	7

Statements	Sample Size	Mean	Std. Deviation	Sample Attitude	Rank
The ministry publishes environmental information to change public behavior toward environmental issues.	45	4.01	0.882	Strongly Agree	2
The ministry publishes environmental information to change public attitudes.	45	3.84	0.915	Agree	8
The ministry conveys information to the public to raise environmental awareness.	45	4.39	2.259	Strongly Agree	1
Partnerships are built with the public to unify efforts among stakeholders concerned with environmental protection.	45	3.89	0.956	Strongly Agree	5
The ministry ensures feedback mechanisms and takes public suggestions as outputs.	45	3.65	1.014	Agree	11
The ministry regularly provides environmental information for managing environmental crises.	45	3.66	0.933	Agree	10
The ministry commits to the flow of environmental information to prevent environmental crises.	45	3.63	0.988	Agree	12
The ministry provides environmental information to reduce the impact of environmental risks.	45	3.90	0.855	Strongly Agree	4
The ministry evaluates environmental information to adapt to environmental risks.	45	3.89	0.969	Strongly Agree	5

Source: Outputs of SPSS 27

The Ministry of Environment and Quality of Life is a central body in formulating and implementing environmental policies at the national level, and environmental communication is one of the main mechanisms it relies on to achieve its objectives. Through analyzing the above survey data, the strategic dimensions of environmental communication activated within the ministry can be identified, and the effectiveness of each dimension can be assessed based on general attitude, mean, and standard deviation.

Awareness Dimension – Enhancing Environmental Awareness

This dimension clearly appears in statement (1), which received the highest mean score (4.39) with "Strongly Agree," reflecting the ministry's strategic focus on raising environmental awareness among the public as a fundamental goal of environmental communication. However, a notable observation is the high standard deviation (2.259) compared to other statements, indicating a wide variation in respondents' evaluations of this role, possibly due to differences in geographic coverage or target groups of communication messages.

Behavioral Dimension – Influencing Behavior and Attitudes

Statements (2) and (8), related to changing behaviors and attitudes toward environmental issues, recorded high means (4.01 and 3.84 respectively), with attitudes of "Strongly Agree" and "Agree," indicating the ministry's strategy aims at transforming environmental values and practices among individuals. This reflects a shift in environmental communication from general awareness to directed persuasive communication.

Interactive Dimension – Use of Media and Social Networks

Data indicates clear interest in modern media, with statements (3, 7, 9) related to using social networks and mass communication media recording means between 3.75 and 3.93, with attitudes from "Agree" to "Strongly Agree." This reflects a strategic reliance on digital technologies to deliver environmental messages and enhance public interaction through forums, images, and videos. This dimension is central amid the digital transformation and changing information consumption patterns across different groups.

Participatory Dimension – Building Partnerships and Feedback Mechanisms

Statements (5 and 11) show the ministry's efforts to build partnerships with the public and activate feedback mechanisms, scoring means of 3.89 and 3.65 respectively. Although these are within the "Agree" range, they are relatively lower than other dimensions, especially regarding taking public suggestions. This indicates a relative weakness in actively involving the public in shaping environmental policies, requiring improvement through developing institutional channels for participatory environmental engagement.

Preventive Dimension – Communication in Environmental Crisis Management

Statements (10, 12, 4) indicate the extent to which the ministry adopts environmental communication as a tool for crisis management and risk reduction, with means ranging between 3.63 and 3.90, yet only a general attitude of "Agree." This points to a relative deficiency in the effectiveness of environmental communication during exceptional circumstances such as environmental disasters. There is no clear indication of the ministry adopting emergency communication plans or early warning communication systems based on anticipation and coordination with other stakeholders.

Conclusion :

The study results reveal positive awareness among the ministry's staff of the importance of environmental communication and its role in supporting and sustaining environmental policies. The ministry relies on several pivotal strategic dimensions such as awareness, behavioral influence, use of digital media, and public interaction—fundamental elements for any effective environmental communication policy.

However, some aspects require further development, particularly enhancing community participation in environmental decision-making, establishing effective environmental crisis management mechanisms, and ensuring transparent and regular flow of preventive information. Addressing these gaps would contribute to improving the effectiveness of adopted environmental policies and supporting the involvement of various stakeholders in achieving sustainable development and environmental justice goals.

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