

Research Article

Environmental Governance: Comparative Analysis of Public and Private Organizations

Iffat Ara* 

Department of Geography and Environment, Islamic University, Kushtia, Bangladesh

Abstract

This study explored the strengths and weaknesses of the public and private sectors in environmental governance, drawing on a comparative analysis of Khulna City Corporation (KCC) and Prodipan, a non-governmental organization (NGO) in Bangladesh. Employing a mixed-methods approach, including interviews, surveys, and archival research, the study examines the performance of both organizations in solid waste management, a critical aspect of environmental governance. The research scrutinizes factors such as legal support, freedom of execution, policy adaptation, transparency, accountability, financial resources, partnerships, and community engagement. The public sector demonstrated strengths in legal backing, autonomy in carrying out its work, and the ability to adjust policies to local needs. However, it faced challenges with transparency, accountability, limited resources, and difficulty forming partnerships with outside organizations. In contrast, the private sector excelled in having a clear structure, being accountable for its actions, operating transparently, satisfying the needs of the community it served, and collaborating effectively with other organizations. However, it was dependent on outside funding, limited legal support, restrictions on how it could operate, and a lack of clear focus on environmental issues. This study advocates for collaborative governance approaches that integrate the strengths of both sectors to achieve environmental protection and sustainable development goals.

Keywords

Environmental Governance, Public Sector, Private Sector, Solid Waste Management, Khulna City Corporation, Prodipan

1. Introduction

Environmental governance has emerged as a critical area of inquiry in recent decades, driven by the growing recognition of complex interactions between human activities and the environment [1]. It encompasses a wide range of actors, institutions, and processes aimed at managing environmental resources and addressing environmental challenges [2]. Within this landscape, the public and private sectors play distinct yet interconnected roles, each with its own set of strengths and weaknesses [3].

The public sector, comprising governmental institutions

and agencies, bears the primary responsibility for establishing and enforcing environmental regulations, managing public environmental resources, and ensuring environmental protection for the common good. However, public sector institutions often face challenges such as bureaucratic inefficiencies, limited resources, and political influence, which can hinder their effectiveness in environmental governance [4].

The private sector, encompassing businesses and non-governmental organizations (NGOs), plays an in-

*Corresponding author: iffat@esg.iu.ac.bd (Iffat Ara)

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creasingly important role in environmental governance through its engagement in sustainable practices, environmental innovation, and community-based conservation efforts [5]. However, the private sector's environmental performance can be influenced by market pressures, a lack of accountability, and a primary focus on profit maximization [6].

Figure 1 shows the organogram of KCC which is a public authority responsible for the operation and maintenance of municipal services including solid waste management. The KCC is headed by an elected Mayor and operates through 41 elected ward commissioners: one for each Ward and 10 women Ward commissioners. It comprises eight functional departments as shown in Figure 1.

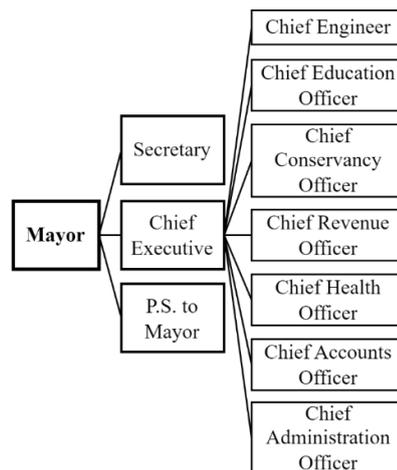


Figure 1. Organogram of Khulna City Corporation (KCC), illustrating the hierarchical structure and functional departments involved in municipal services and environmental management.

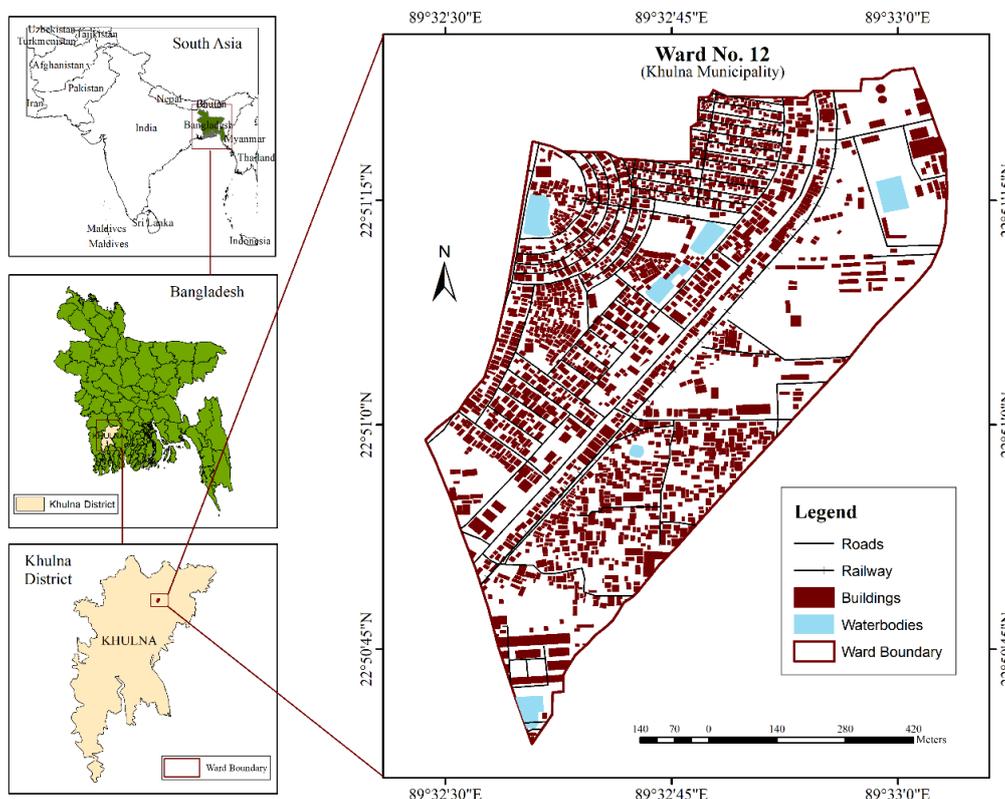


Figure 2. Map of Khulna City Corporation (KCC), highlighting the 31 wards and key administrative zones relevant to the study.

Khulna is the third largest city in Bangladesh and faces various environmental challenges, particularly in solid waste management. The city suffers from unplanned urban growth, extensive urban poverty, waterlogging, proliferation of slums, drainage and sanitation issues, pollution, and traffic congestion. The population of Khulna is about 0.92 million with an area of 45.65 square kilometers and 31 Wards. The study area is selected as Ward number 12. The city is geographically located South-West part of Bangladesh and situated at

a coastal district. The city is on average 4 meters above mean sea level.

This study aims at studying environmental governance through a comparative analysis of two organizations in Khulna, Bangladesh: Khulna City Corporation (KCC), a public institution responsible for municipal services, and Prodipan, engaged in various environmental and social development projects to provide a nuanced understanding of the strengths and weaknesses of the public and private sectors. By

examining their performance in solid waste management, the research seeks to identify key factors that contribute to the successes they recorded and the challenges each sector face.

2. Methodology

This study employs a mixed method approach to investigate the strengths and weaknesses of the public and private

sectors in environmental governance. Mixed methods research, which combines qualitative and quantitative approaches, offers a more comprehensive understanding of complex phenomena by integrating different perspectives and data types [7]. The research design integrates qualitative and quantitative methods to provide a comprehensive analysis of the factors influencing environmental performance [8].

2.1. Case Selection

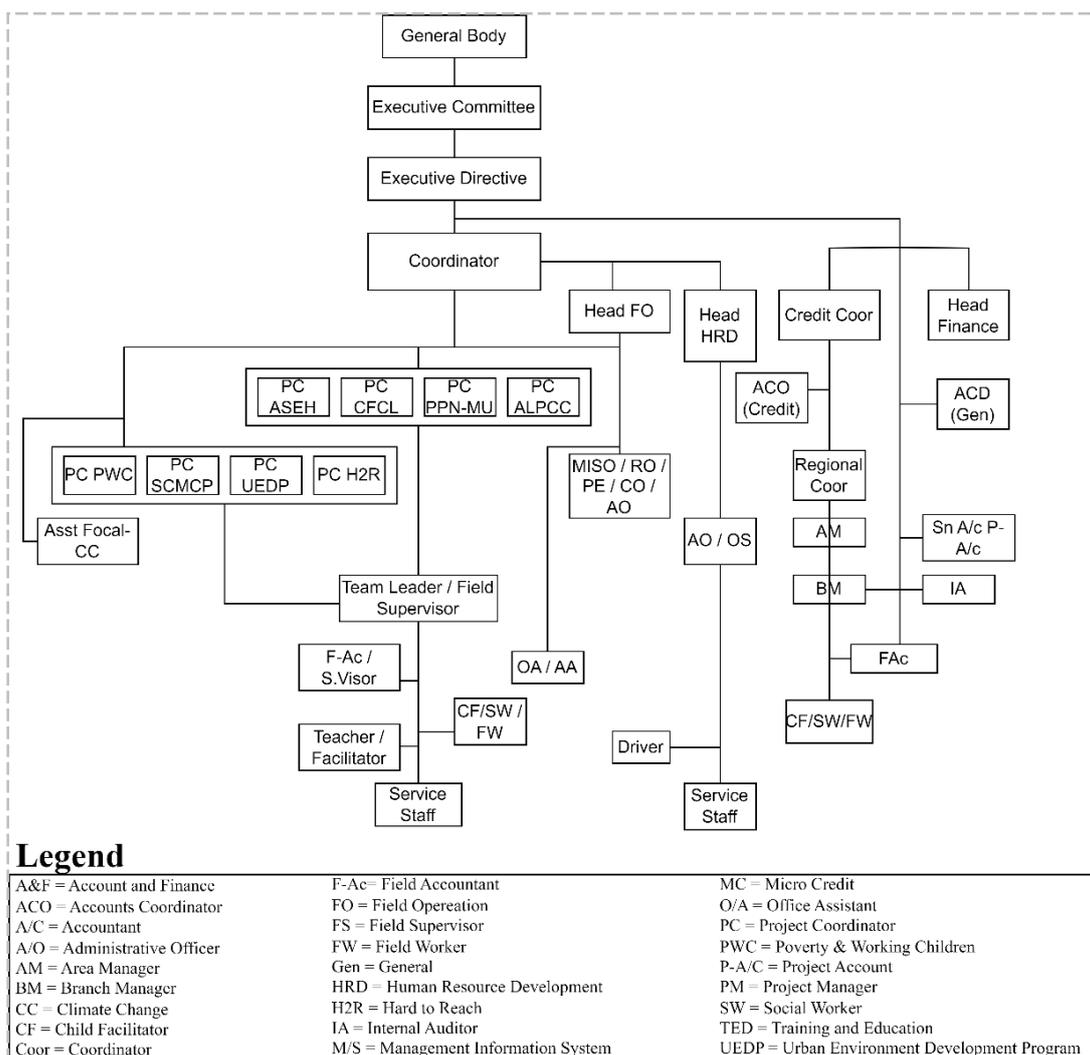


Figure 3. Organizational hierarchy of ProdiPan, illustrating the various levels of decision-making, staff roles, and project implementation within the NGO.

The study focuses on two organizations in Khulna, Bangladesh: Khulna City Corporation (KCC), representing the public sector, and ProdiPan, an NGO representing the private sector. Case study methodology is particularly suitable for in-depth investigations of contemporary phenomena within their real-world contexts [9]. These organizations were selected based on their prominent roles in environmental man-

agement within the region, particularly in solid waste management. KCC, as the municipal authority, bears the primary responsibility for public waste management services [10]. ProdiPan, with its extensive experience in community-based environmental initiatives, offers a valuable private sector counterpart for comparison [11]. As a private agency, ProdiPan is engaged in various environmental and social devel-

opment projects. It is a local NGO based in Khulna, Bangladesh and established in 1983. It has a long history of working on various environmental and social development projects in both rural and urban areas across the country. It is one of the leading organizations in the country in environmental management and environmentally friendly development. This NGO is also involved in the empowerment of people through community participation, resource mobilization, waste management, and women's participation.

2.2. Data Collection

Data collection involved a variety of methods to gather information from diverse perspectives, enhancing the validity and reliability of the findings [12]. These methods included:

- 1) Interviews: Semi-structured interviews were conducted with key personnel in both organizations, including government officials, NGO staff, and community leaders. Semi-structured interviews allow for flexibility while maintaining a focus on key research questions, enabling rich qualitative data collection [13]. These interviews provided insights into the organizations' policies, practices, challenges, and perspectives on environmental governance.
- 2) Surveys: Citizen surveys were conducted in areas served by both KCC and Prodipan to assess public satisfaction with waste management services, environmental awareness, and perceptions of the organizations' environmental performance. Surveys are a useful tool for gathering quantitative data from a large sample, allowing for statistical analysis and generalization [14].
- 3) Archival Research: Archival research involved reviewing official documents, reports, and publications from KCC and Prodipan to gather data on their organizational structures, financial resources, environmental programs, and performance indicators. Archival research provides valuable historical context and allows for the examination of organizational practices over time [9].

2.3. Data Analysis

Qualitative data from interviews were analyzed using thematic analysis to identify key themes and patterns related to environmental governance practices, challenges, and opportunities in both sectors. Thematic analysis is a flexible and widely used method for identifying, analyzing, and reporting patterns within qualitative data [15]. Quantitative data from surveys and archival research were analyzed using descriptive statistics and comparative analysis to assess the performance of KCC and Prodipan across various indicators, including:

- 1) Effectiveness: Measured by the extent of care for environmental protection and the level of public satisfaction with waste management services.
- 2) Responsiveness: Assessed through the continuity of

service delivery and the level of satisfaction with the service.

- 3) Accountability: Evaluated based on the consistency between defined hierarchical structures and actual delegation of responsibility, as well as public perceptions of the organizations' accountability. Accountability in governance refers to the mechanisms and processes through which organizations and individuals are held responsible for their actions and decisions [16].
- 4) Transparency: Measured by the level of transparency in cost management, staff management, and information clarity and availability. Transparency in governance ensures that information is accessible and readily available to stakeholders, promoting public trust and participation [17].
- 5) Rule of Law: Assessed based on the existence, adequacy, and enforcement of environmental regulations. The rule of law is a fundamental principle of good governance, ensuring that laws are applied fairly and consistently [18].
- 6) Policy Formulation: Evaluated based on the extent of framing and planning, suitability of policies, and public participation in policymaking. Effective policy formulation requires stakeholder engagement and consideration of diverse perspectives [19].
- 7) Partnership and Networks: Assessed by the strength of internal and external partnerships with government agencies, NGOs, and international organizations. Partnerships and networks are crucial for effective environmental governance, facilitating collaboration and resource sharing [20].

The study acknowledges several limitations. Firstly, the findings may be specific to the context of Khulna, Bangladesh, and may not be generalizable to other regions or countries. This is a common limitation of case studies [9]. Secondly, data availability limited the scope of quantitative analysis in some areas. Lastly, qualitative data analysis is inherently subjective, potentially influencing interpretations [21]. Despite these limitations, the study provides valuable insights into the strengths and weaknesses of the public and private sectors in environmental governance, contributing to the broader discourse on environmental management and sustainable development.

3. Results

This study investigated the strengths and weaknesses of both public and private sector organizations in the realm of environmental governance. By analyzing these two sectors, the study gained valuable insights into their respective capabilities and limitations in addressing environmental challenges.

3.1. Strengths of Public Sector

Public sector organizations possess distinct advantages in

environmental governance due to their unique position and authority. These strengths include:

- 1) **Legal Support:** The public sector enjoys extensive legal support, including its own magistrates and access to police forces, enabling it to enforce environmental regulations effectively.
- 2) **Freedom of Execution:** The public sector has significant freedom in executing its actions for environmental governance, such as implementing waste management programs or addressing pollution issues.
- 3) **Policy Adaptation:** The public sector demonstrates flexibility in adapting its policies to suit the local context, ensuring that environmental regulations are relevant and effective.
- 4) **Internal Partnership:** The public sector has strong internal partnerships with the central government and its ministries, facilitating coordinated efforts in environmental governance.

The next sub-section shows the weaknesses of the public sector regarding environmental governance.

3.2. Weaknesses of Public Sector

Despite these inherent advantages, public sector organizations also face various challenges that can impede their effectiveness in environmental governance. These weaknesses include:

- 1) **Transparency and Accountability:** The public sector faces challenges in ensuring transparency and accountability in its operations, particularly in financial matters and staff management. This can lead to mismanagement and hinder effective environmental governance.
- 2) **Financial and Resource Constraints:** The public sector often faces financial and resource limitations, including a lack of skilled manpower and inadequate equipment, which can restrict its ability to implement comprehensive environmental programs.
- 3) **Limited External Partnership:** The public sector has limited external partnerships with international organizations and NGOs, potentially hindering access to funding, expertise, and innovative solutions for environmental challenges.
- 4) **Policy Formulation:** The public sector's policy formulation process can be inefficient and inconsistent, with limited community participation and a lack of clear, long-term environmental strategies.

The next sub-section shows the Strength of the private sector regarding environmental governance.

3.3. Strengths of Private Sector

Private sector organizations, while playing a crucial role in environmental governance, possess distinct strengths that contribute to their effectiveness. These strengths include:

- 1) **Organized Structure and Accountability:** Private sector

organizations like ProdiPan have a well-defined organizational structure and a strong sense of accountability, ensuring efficient operations and responsible environmental practices.

- 2) **Transparency:** The private sector demonstrates greater transparency in its actions, particularly in financial matters and staff management, fostering trust and accountability.
- 3) **Service Satisfaction:** The private sector often achieves higher service satisfaction among the public due to its responsiveness, efficiency, and focus on community needs in environmental projects.
- 4) **External Partnership:** The private sector has strong external partnerships with international organizations and NGOs, facilitating access to funding, expertise, and innovative solutions for environmental projects.

The next sub-section shows the weaknesses of the private sector regarding environmental governance.

3.4. Weaknesses of Private Sector

However, private sector organizations also encounter certain limitations that can affect their overall impact on environmental governance. These weaknesses include:

- 1) **Dependence on Donors:** Private sector organizations often rely heavily on donor funding, which can limit their freedom in decision-making and create uncertainty in long-term planning for environmental projects.
- 2) **Limited Legal Support:** The private sector has limited access to legal support compared to the public sector, potentially hindering its ability to enforce environmental regulations or address legal challenges effectively.
- 3) **Restricted Freedom of Action:** The private sector's freedom of action in environmental governance can be restricted by its dependence on public institutions and donor agencies, potentially limiting its flexibility and responsiveness to local needs.
- 4) **Lack of Specific Environmental Focus:** While engaged in various environmental projects, private sector organizations may lack a specific, dedicated focus on environmental management and monitoring, potentially limiting their overall impact on environmental governance.

The next section discuss the comparison and analysis of both sectors regarding environmental governance.

4. Discussion

The findings of this study offer valuable insights into the comparative strengths and weaknesses of the public and private sectors in environmental governance. While the public sector enjoys advantages in legal support, freedom of execution, and policy adaptation, it faces challenges in transparency, accountability, resource constraints, and external partnerships. Conversely, the private sector demonstrates strengths in or-

ganizational structure, accountability, transparency, service satisfaction, and external partnerships, but grapples with donor dependency, limited legal support, restricted freedom, and a lack of specific environmental focus. These findings align with broader literature on public and private sector roles in governance [22].

4.1. SWOT Analysis of Public Sector

This SWOT analysis examines the internal strengths and weaknesses, as well as the external opportunities and threats, faced by the public sector in the realm of environmental governance. SWOT analysis is a useful strategic planning tool for evaluating these factors [23]. Understanding these factors is crucial for enhancing the public sector's effectiveness in addressing environmental challenges and promoting sustainable development.

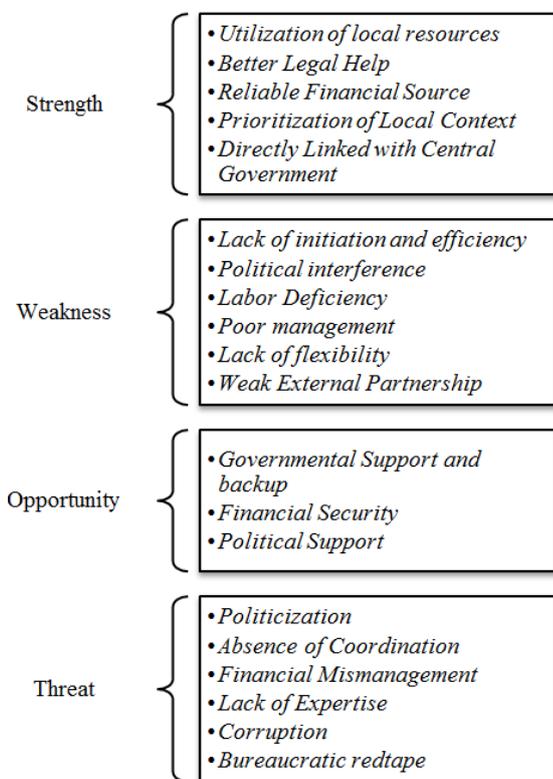


Figure 4. SWOT analysis of public sector.

The SWOT analysis (Figure 4) shows that the public sector possesses notable strengths in environmental governance, such as access to local resources and strong legal support. However, weaknesses like inefficiency and political interference must be addressed. By capitalizing on opportunities like governmental support and mitigating threats like politicization, the public sector can enhance its contribution to environmental protection and sustainable development. This reinforces the need for public sector reform and improved governance mechanisms [24].

4.2. SWOT Analysis of Private Sector

The SWOT analysis of Figure 5 delves into internal strengths and weaknesses, as well as the external opportunities and threats, confronting the private sector in the domain of environmental governance. Recognizing these factors is vital for private sector entities to augment their efficacy in tackling environmental concerns and propelling sustainable practices.

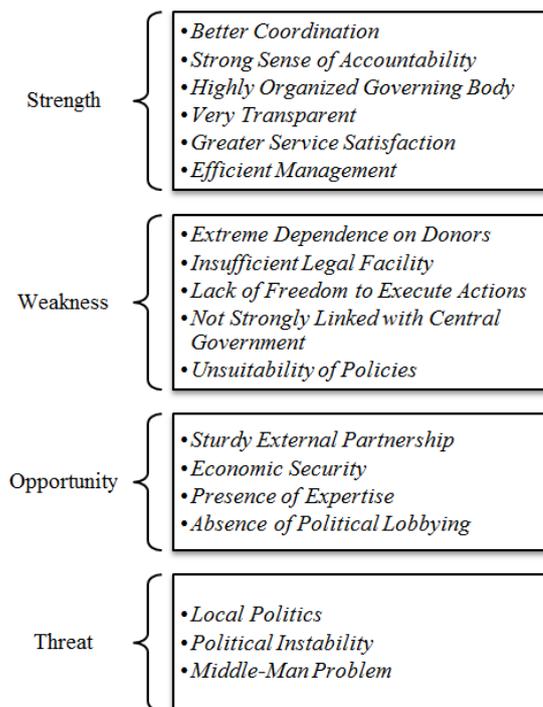


Figure 5. SWOT analysis of private sector.

The SWOT analysis (Figure 5) shows that the private sector exhibits noteworthy strengths in environmental governance, such as adept coordination and a robust sense of accountability. Nonetheless, weaknesses like an excessive reliance on donors and a lack of freedom in executing actions necessitate attention. By harnessing opportunities such as sturdy external partnerships and mitigating threats like local politics, the private sector can amplify its positive impact on environmental conservation and sustainable progress. This highlights the importance of creating enabling environments for private sector engagement in environmental governance [25].

These findings contribute to the broader discourse on environmental governance by highlighting the need for both sectors to address their respective weaknesses and leverage their strengths to enhance environmental performance. Public sector institutions can improve their effectiveness by strengthening transparency and accountability mechanisms, securing sustainable financial resources, and fostering broader partnerships. Private sector organizations can enhance their contributions by diversifying funding sources, strengthening

legal expertise, and adopting a more focused approach to environmental management and monitoring. This underscores the need for collaborative governance approaches that integrate the strengths of both sectors [26].

Comparative analysis of environmental governance

Table 1 presents a comparative analysis of Khulna City Corporation (KCC), representing the public sector, and

Prodipan, representing the private sector, across key indicators of environmental governance. This analysis highlights the strengths and weaknesses of each sector in managing environmental issues. Comparative analysis is a valuable research method for understanding similarities and differences between cases [27].

Table 1. Comparative performance analysis of KCC (public sector) and Prodipan (private sector) across key indicators of environmental governance, highlighting their respective strengths and weaknesses.

Variables	Indicators	Public Sector	Private Sector
Effectiveness	Extent of Care for Environmental Protection	Low	High
	Municipal Performance	Low	High
Accountability	Consistency	Low	High
	Cognizance	Low	High
	Cost Management	Low	High
Transparency	Staff Management	Low	High
	Information Clarity	Low	High
Rule of Law	Adequacy and availability	High	Low
	Freedom of execution	High	Low
	Framing and planning	Low	Low
Policy Formulation	Suitability of Policies	High	Low
	Exhortation	Low	Low
Partnership & Networks	Internal Partnership & Network	High	Low
	External Partnership & Network	Low	High
Responsiveness	Continuity of Service and Delivery	Low	High
	Satisfaction With the Service	Low	High

In summary, Table 1 reveals distinct differences in the performance of KCC and Prodipan across various indicators of environmental governance. These findings underscore the need for both public and private sector organizations to address their respective weaknesses and leverage their strengths to enhance their overall contribution to environmental protection and sustainable development. This aligns with the concept of collaborative governance, which emphasizes the importance of cross-sector partnerships [28].

The study's findings also underscore the importance of collaboration and synergy between the public and private sectors in achieving effective environmental governance. By recognizing their complementary strengths and weaknesses, both sectors can work together to overcome challenges, share resources, and implement innovative solutions for environmental protection and sustainable development. This reinforces the idea that effective environmental governance often

requires a mix of public and private sector involvement [20].

5. Conclusion

This study examined the strengths and weaknesses of the public and private sectors in environmental governance through a comparative analysis of KCC and Prodipan in Khulna, Bangladesh. The research identified key strengths and weaknesses of each sector, highlighting the need for both to address their respective limitations and leverage their strengths to enhance environmental performance. The findings also underscore the importance of collaboration and synergy between the public and private sectors in achieving effective environmental governance. By recognizing their complementary strengths and weaknesses, both sectors can work together to overcome challenges, share resources, and implement innovative solutions for environmental protection

and sustainable development.

Abbreviations

KCC	Khulna City Corporation
NGO	Non-governmental Organization
SWOT	Strength, Weakness, Opportunity and Threat

Author Contributions

Iffat Ara is the sole author. The author read and approved the final manuscript.

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Data Availability Statement

The data is available from the corresponding author upon reasonable request.

Conflicts of Interest

The author declares no conflicts of interest.

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Biography



Iffat Ara received an MS in Geography and Environmental Studies from Rajshahi University, Bangladesh, in 2016. In April 2016, she joined Bangladesh University of Professionals as a lecturer, and in July 2016, she began working at Patuakhali Science and Technology University. In July 2018, she joined Islamic University, Bangladesh, where she is currently an assistant professor in the Department of Geography and Environment. Her research interests include geographical information systems, political ecology, and disaster management.

Research Field

Iffat Ara: Human-environment interaction, Geospatial analysis, WASH (Water, Sanitation and Hygiene), Cities and communities, Soil geography, Climate change and disaster management, Health geography.