



Utilization of Facebook as a Real-Time Environmental Monitoring Tool for Enhancing CCENRO Reporting in the Manila Bay Clean-Up, Rehabilitation, and Preservation Project in Cabanatuan City

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ABSTRACT: Environmental monitoring remains a critical component in ensuring the effectiveness of environmental rehabilitation initiatives, particularly in support of the Continuing Mandamus on Manila Bay, which mandates coordinated action among government agencies and local government units (LGUs). In inland cities such as Cabanatuan, monitoring efforts are typically carried out through field inspections, barangay-level reporting, and compliance submissions; however, these processes often result in delays, limited coverage, and inconsistencies in data collection. This study explores how Facebook, specifically its Group Messenger and posting features, can support environmental monitoring and reporting by the City Environment and Natural Resources Office (CCENRO).

Focusing on the use of social media as a practical communication tool, the study examines how real-time information sharing and community participation can address the limitations of conventional monitoring systems. By analyzing environmental reports, messages, and posts from Facebook groups, Messenger chats, and the official CCENRO page, the research aims to identify how digital platforms contribute to reporting efficiency, monitoring coverage, and stakeholder engagement. Through a descriptive qualitative approach, the study provides insights into how integrating Facebook into local environmental governance can enhance responsiveness while maintaining alignment with existing reporting frameworks.

KEYWORDS: Facebook, Facebook Messenger, environmental monitoring, CCENRO, social media, participatory governance, solid waste management, Manila Bay rehabilitation

I. INTRODUCTION

Environmental monitoring is essential in ensuring the effectiveness of environmental rehabilitation initiatives. In line with this, the Continuing Mandamus on Manila Bay issued by the Supreme Court of the Philippines mandates concerned agencies and local government units (LGUs) to implement comprehensive environmental management strategies focused on improving water quality and protecting ecological resources. While Cabanatuan City is geographically situated inland, its role in supporting broader environmental goals remains significant. The city contributes through sustained efforts in watershed management, effective solid waste management implementation, and the promotion of environmental awareness programs that supports Manila Bay rehabilitation.

The Cabanatuan City Environment and Natural Resources Office (CCENRO) serves as the primary local government office responsible for environmental program implementation and monitoring in the city, which comprises 89 barangays. Traditional monitoring methods include field inspections, barangay-level reporting, and the submission of compliance documentation to national agencies such as the Department of the Interior and Local Government (DILG) and Department of Environment and Natural Resources (DENR). While these methods remain essential, they are often constrained by challenges related to timeliness, data accuracy, and the extent of monitoring coverage across geographically dispersed communities.

With the widespread use of social media in the Philippines, Facebook has emerged as an accessible platform for environmental communication and reporting. Facebook group messaging and posting features allow real-time sharing of environmental observations, activity documentation, and



coordination of environmental programs. This study aims to assess how Facebook supports CCENRO's

II. LITERATURE REVIEW

The continuous advancement of digital technologies has reshaped how local government units (LGUs) perform environmental monitoring and reporting. In the Philippines, widely accessible communication platforms offer new opportunities to enhance traditional governance systems. One emerging approach is the use of social media, particularly Facebook, as a supplementary tool for real-time information sharing, public participation, and coordination. This review explores its potential in supporting environmental monitoring efforts related to the Manila Bay rehabilitation initiative.

Environmental monitoring remains a key component of governance, enabling institutions to assess conditions, enforce regulations, and respond to environmental challenges. The Supreme Court's continuing mandamus on the Manila Bay Cleanup requires sustained and coordinated action among agencies and LGUs [1]. Effective compliance depends on the availability of accurate and timely environmental data. Although Cabanatuan City is inland, it contributes indirectly through watershed protection, solid waste management, and environmental awareness initiatives. Inland LGUs play a crucial role in reducing upstream pollution and promoting sustainable land use [2].

The City Environment and Natural Resources Office (CCENRO) of Cabanatuan oversees environmental programs across its 89 barangays. Traditional monitoring methods—such as field inspections, barangay reporting, and compliance submissions to agencies like the Department of the Interior and Local Government and the Department of Environment and Natural Resources—remain essential but face operational limitations. Manual processes often result in delays, inconsistencies in reporting, and limited monitoring coverage due to resource constraints [3].

The widespread use of Facebook in the Philippines provides an opportunity to strengthen monitoring systems. Its real-time communication features enable faster reporting and community-level participation. Studies show that social media can support participatory governance [4] and improve responsiveness in environmental monitoring [5]. Integrating Facebook into CCENRO operations can help address gaps in traditional systems by facilitating timely reporting, expanding coverage,

environmental monitoring and reporting efforts related to the Manila Bay rehabilitation program

and promoting transparency and public engagement [6].

III. METHODOLOGY

We conducted qualitative research using a descriptive research design focusing on Facebook as a supplementary environmental monitoring tool supporting CCENRO reporting. The study aimed to examine how Facebook is used in environmental monitoring, reporting, and community engagement within Cabanatuan City.

Data were collected from selected Facebook sources, including the official CCENRO Facebook page, environmental community Facebook groups in Cabanatuan City, and Messenger group chats involving CCENRO personnel, barangay officials, and community volunteers. The data covered environmental posts and reports related to monitoring activities, clean-up programs, pollution reporting, and environmental awareness initiatives.

Facebook posts and group messages were categorized based on CCENRO reporting classifications such as environmental compliance monitoring, solid waste management reporting, greening programs, pollution incident reporting, and community participation activities. Data included reports and photo documentation sent through Facebook Messenger group chats and posts published on Facebook pages.

Specifically, the study was guided by the following questions:

- How is Facebook used in CCENRO environmental monitoring and reporting?
- What types of environmental activities are commonly reported through Facebook?
- How are Facebook posts and messages categorized under CCENRO reporting classifications?
- How does Facebook contribute to environmental communication and community participation?

The collected data were analyzed to identify common themes and evaluate the role of Facebook in improving environmental reporting efficiency, coverage, and public engagement.



IV. RESULTS

The findings show that Facebook is actively used as a supplementary tool in CCENRO's environmental monitoring and reporting in Cabanatuan City. Messenger group chats serve as real-time reporting channels where barangay officials, personnel, and community volunteers submit incident reports, often supported by photos and location details. The official Facebook page is primarily used for public information dissemination, including announcements, program updates, and environmental campaigns.

In terms of content, the most commonly reported activities include solid waste management concerns such as illegal dumping and clean-up drives along waterways, followed by greening programs, environmental awareness initiatives, and occasional pollution incident reports. These posts and messages were successfully categorized under CCENRO classifications, namely: environmental compliance monitoring, solid waste management, greening programs, pollution incident reporting, and community participation activities.

Overall, Facebook facilitates faster reporting, broader monitoring coverage, and increased community involvement in environmental activities.

V. DISCUSSION

The results indicate that Facebook enhances the efficiency of environmental monitoring by enabling real-time communication, which addresses delays commonly associated with traditional reporting systems. The frequent reporting of solid waste issues reflects ongoing urban environmental challenges, while the presence of greening and awareness posts highlights proactive efforts in environmental management.

The alignment of Facebook data with CCENRO reporting classifications suggests that social media can complement formal monitoring systems when properly organized. More importantly, Facebook promotes participatory governance by allowing citizens to report environmental concerns and engage with local government initiatives. This expands the monitoring capacity of CCENRO and strengthens transparency and accountability.

The effectiveness of Facebook as a supplementary monitoring tool may also be influenced by the existing institutional capacity of CCENRO. The

office, along with several barangays in Cabanatuan City, has received recognition from the Department of Environment and Natural Resources under the Manila Bay Rehabilitation Program. Such recognition suggests that established environmental programs and active local participation are already in place, which may contribute to the successful adoption of digital platforms like Facebook for monitoring and reporting.

However, despite these advantages, the informal nature of Facebook data requires validation and proper documentation to ensure reliability. Strengthening verification mechanisms and integrating social media reports into official systems remain necessary to maximize its effectiveness.

VI. CONCLUSION

The study concludes that Facebook is an effective supplementary tool for CCENRO environmental monitoring and reporting in Cabanatuan City. It is widely used for real-time communication, supports various types of environmental reporting, and aligns with existing classification systems.

Furthermore, Facebook significantly contributes to environmental communication and community participation by enabling citizen involvement and improving information dissemination. Despite limitations related to data verification, its integration into local governance enhances reporting efficiency, coverage, and public engagement.

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