


## The importance of project management in the implementation of environmental management systems in companies: A literature review

 <https://doi.org/10.56238/sevned2024.007-012>

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### ABSTRACT

The objective of this research was to analyze the importance of project management in the implementation of environmental management systems in companies through a literature review. Based on the literature search, it was found that project management plays an essential role in the implementation of environmental management systems in organizations. The structured and systematic approach provided by project management allows for proper planning, controlled execution and continuous monitoring of activities related to environmental management. This includes clearly defining objectives, analyzing tasks, allocating resources appropriately, coordinating stakeholders, and evaluating the results achieved. By adopting project management as an integral part of the implementation of environmental management systems, organizations are more likely to achieve success and significant benefits, such as reduced environmental impacts, compliance with regulations, and a better reputation in the market. These practices not only demonstrate the

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### Multidisciplinary Perspectives: Integrating Knowledge

*The importance of project management in the implementation of environmental management systems in companies: A literature review*



commitment to sustainability and social and environmental responsibility, but also strengthen the image of organizations in the eyes of customers, investors, and society as a whole.

**Keywords:** Project management, Environmental Management Systems, Sustainability.



## INTRODUCTION

Over the past few decades, the advance of industrialization and the growth of human activities have led to negative impacts on the environment, such as the degradation of ecosystems, air and water pollution, and climate change. Because of this, companies have been pressured to adopt sustainable practices and take responsibility for the environmental impacts generated by their operations, increasingly recognizing the need to adopt sustainable practices in their operations (MIRANDA, 2019).

The implementation of an environmental management system is, according to Moura (2023), a strategic response to address these challenges. This system provides a structured approach to identifying, assessing, and managing the environmental impacts of business activities. It establishes guidelines and procedures to promote sustainability, seeking to reduce negative impacts and continuously improve the organization's environmental performance.

However, implementing an environmental management system is a complex undertaking. It requires careful planning to define objectives, identify areas of focus, and set realistic goals. In addition, it is necessary to coordinate the various stakeholders involved, such as employees, suppliers, customers, and local communities. The efficient allocation of resources is also essential, considering that implementation involves investments in training, technologies, audits, and monitoring (SILVA, 2023).

In this scenario, project management plays, according to Cavalcanti and Silva (2016), a fundamental role to assist in the implementation of environmental management systems in companies, as it offers a systematic approach to manage all the steps involved in the implementation of the environmental management system. The principles and practices of project management are applied to ensure the clear definition of goals and scope, the detailed planning of activities, the proper allocation of resources, the management of risks, and the definition of key performance indicators.

Therefore, the present research aimed to analyze the importance of project management in the implementation of environmental management systems in companies through a literature review. To this end, a literature review was carried out, which is, according to Gil (2011), a research method widely used in the academic and scientific area to obtain in-depth knowledge on a given topic. To ensure the comprehensiveness and relevance of the literature review, recognized academic databases, such as *Scopus* and *Web of Science*, as well as specialized websites and renowned scientific journals, were used. The selection criteria for the studies included the relevance to the topic, the quality and credibility of the sources, and the focus on the relationship between project management and environmental management systems.



By understanding the importance of project management in this context, organizations will be able to take more effective approaches to planning and executing their environmental management initiatives. This can lead to improved environmental performance for businesses, as well as increased compliance with environmental regulations and a better reputation in the market. In addition, the survey also provided valuable insights for project management professionals, highlighting the relevance of acquiring specific knowledge and skills to handle environmental management system implementation projects.

## DEVELOPMENT

### CONCEPTS AND FUNDAMENTALS OF PROJECT MANAGEMENT

Project management is, according to Keeling and Branco (2017), an essential discipline for the success of any enterprise. It involves applying methods, techniques, and tools to plan, organize, execute, and control projects efficiently and effectively. In this context, several concepts and fundamentals are fundamental to properly understand and apply project management.

From the perspective of Morioka and Carvalho (2016), one of the key concepts is the project life cycle, which describes the phases through which a project goes from conception to completion. These phases can vary depending on the methodology adopted, but typically include steps such as initiation, planning, execution, monitoring, and closure. Understanding the project life cycle helps you organize the work and define the activities needed at each stage.

Another important concept is the scope of the project, which defines the work to be done and the expected results. The scope should be clearly defined and documented, thus avoiding misinterpretations and unplanned changes. Good scoping is essential to set realistic goals and ensure that the project meets stakeholder expectations (SABBAG, 2013).

In addition, Bella, Gutierrez and Quelhas (2019) highlight that project management involves the identification and involvement of stakeholders. Stakeholders are individuals or groups who have a vested interest in the project and may be affected by its outcomes. It is critical to understand their needs, expectations, and influences to ensure effective communication and alignment of interests.

Planning is a key element of project management, as it involves setting objectives, identifying activities, estimating necessary resources, drawing up schedules, and allocating responsibilities. A well-crafted project plan serves as a guide to guide actions and monitor progress over time (KERZNER, 2015).

Risk management is another fundamental aspect, as Keeling and Branco (2017) reiterate. Every project faces potential uncertainties and risks, which can affect its success. Identifying, assessing, and mitigating these risks is essential to avoid problems and minimize negative impacts. This involves creating contingency plans and implementing preventative measures.



Effective communication is a core tenet of project management. Good communication involves conveying information in a clear, accurate, and timely manner between project team members, stakeholders, and other parties involved. It promotes alignment, collaboration, and problem-solving, contributing to project success (KEELING; WHITE, 2017).

Project management also requires leadership skills. A good project leader is able to motivate the team, set direction, make effective decisions, and resolve conflicts. He or she plays a key role in achieving positive outcomes and managing the human interactions involved in the project (KERZNER, 2015).

Finally, Morioka and Carvalho (2016) reiterate that evaluation and continuous learning are fundamental in project management. At the end of a project, it is important to conduct an assessment to identify lessons learned, strengths, and areas for improvement. This information can be applied to future projects, contributing to continuous improvement and increased effectiveness in project management.

## ENVIRONMENTAL MANAGEMENT SYSTEMS

According to Alencar et al. (2015), environmental management systems (EMS) are organizational structures and processes implemented by companies and organizations to manage and minimize their environmental impact. These systems are designed to help organizations identify, control, and reduce the negative effects of their activities, products, or services on the environment.

An effective EMS involves adopting clear environmental policies and setting specific environmental goals and objectives. These goals can include reducing energy consumption, minimizing waste, conserving natural resources, and preventing pollution. It is important that these targets are measurable, realistic and aligned with the principles of sustainable development (ALPERSTEDT; QUINTELLA; SOUZA, 2010).

According to Moura (2023), one of the main tools used in EMS is the environmental impact assessment. This assessment involves analyzing the potential effects of the organization's activities on the environment, from the extraction of raw materials to the production, distribution, use, and disposal of products. Based on this analysis, control and mitigation measures are implemented to reduce or eliminate negative impacts.

In addition to environmental impact assessment, EMS also involve the implementation of environmental management practices in all areas of the organization. This can include adopting cleaner and more efficient technologies, establishing standard operating procedures, training employees on environmental issues, and communicating transparently with external stakeholders such as suppliers, customers, and local communities (MOURA, 2013).



ISO 14001 certification is, according to Bleidorn and Schmidt (2022), one of the most common ways of recognizing an effective EMS. This certification establishes the requirements for the implementation of an environmental management system and is widely recognized internationally. To achieve certification, an organization must demonstrate compliance with the requirements of the ISO 14001 standard, including setting environmental targets, monitoring and measuring environmental performance, and conducting regular audits.

As Silva (2023) reiterates, the benefits of a well-implemented EMS are numerous. In addition to reducing environmental impact, organizations can gain economic advantages, such as reduced operating costs through energy efficiency and waste minimization. In addition, a solid EMS can improve the company's reputation and image, increase the confidence of customers and suppliers, and open up new business opportunities, especially in a context where sustainability is increasingly valued.

## THE IMPORTANCE OF PROJECT MANAGEMENT IN THE IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEMS

According to Aguiar, Epelbaum and Shibao (2013), the implementation of environmental management systems is essential for organizations to control and minimize the environmental impacts of their activities. However, this process can be complex and involves several aspects, from setting goals and objectives to adopting appropriate environmental practices and policies. It is in this context that project management plays a crucial role.

Miranda (2019) corroborates that project management is a structured and systematic approach to plan, execute, and control activities with the aim of achieving specific goals within a given time frame and budget. When it comes to the implementation of environmental management systems, project management becomes especially relevant, as it helps to ensure that all necessary steps are properly planned and executed.

One of the first steps in project management is the clear definition of the project's objectives. In this context, the implementation of an environmental management system can have different objectives, such as reducing the consumption of natural resources, minimizing waste generation, complying with environmental legislation, and improving the company's image in relation to sustainability. It is important that these objectives are established in a clear and measurable way, so that the progress of the project can be tracked over time (MIRANDA, 2019).

As highlighted by Cavalcanti and Silva (2016), after defining the objectives, project management involves the identification and analysis of all the tasks and activities necessary to achieve them. In this context, the implementation of an environmental management system may require environmental impact studies, the definition of environmental performance indicators, the



training of employees, the implementation of monitoring and control practices, among other actions. Project management assists in the organization of these activities in a sequential and logical manner, preventing important aspects from being neglected.

Another fundamental aspect of project management is, according to Barbieri (2007), the proper planning of the necessary resources. This includes allocating qualified personnel, setting a budget, obtaining necessary equipment and materials, among others. By carefully planning resources, project management ensures that the environmental management system is implemented efficiently and effectively.

Authors such as Gomes et al. (2013) comment that project management also plays an important role in the coordination of the different parties involved in the implementation of the environmental management system. This includes communication and alignment between the various sectors of the organization, as well as interaction with suppliers, partners, and other stakeholders. Through project management, it is possible to ensure that everyone is working together and towards the same goals.

In addition, project management allows for a more systematic approach to monitoring and controlling project progress. This involves establishing key performance indicators, setting milestones and interim deadlines, as well as continuously evaluating the results achieved. Through this monitoring, project management enables the identification of deviations from the established plans and the adoption of corrective measures to ensure the success of the implementation of the environmental management system (AGUIAR; EPELBAUM; SHIBAO, 2013).

Finally, it is observed that project management plays a fundamental role in the evaluation of the results achieved and in organizational learning. After the implementation of the environmental management system, it is important to conduct an analysis of the performance obtained and identify opportunities for improvement. Through project management, it is possible to document lessons learned and use this knowledge for future projects and initiatives related to environmental management.

## **FINAL THOUGHTS**

Based on this literature research, it was possible to verify that project management plays an essential role in the implementation of environmental management systems in organizations. Project management provides a structured and systematic approach to planning, executing, and controlling necessary activities, ensuring clear definition of objectives, identification and analysis of tasks, proper planning of resources, coordination of stakeholders, and monitoring of project progress.

In addition, project management also contributes to the evaluation of the results achieved and organizational learning, promoting continuous improvement in environmental management. By



adopting project management as an integral part of implementing environmental management systems, organizations are more likely to achieve success and realize significant benefits, such as reduced environmental impacts, regulatory compliance, and a better reputation in the market.

In short, by adopting project management practices, organizations can achieve significant benefits, both in terms of reducing environmental impacts and in terms of regulatory compliance and reputation in the market. Through a structured and systematic approach, project management enables organizations to identify and implement effective measures to minimize the environmental impacts of their activities while ensuring compliance with applicable environmental laws and regulations. This not only demonstrates the organization's commitment to sustainability and social and environmental responsibility, but also strengthens its image in the eyes of customers, investors, and society as a whole.





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