



MIDOCEAN UNIVERSITY

College of Business

Master of Project Management / Sector

**Project Management Practices for Integrating Saudi Arabia's Net Zero
GHG 2060 Objectives in MOSTADAM Certification**

Prepared By/ Tariq Ashour

/Supervision

Dr. Faisal Abdul Hameed

Dr. Fayez Jarad

Academic Year:

2024

Introduction:

Last few years, all countries have become more interested in climate change challenges. Therefore, Saudi Arabia has set a goal in COP 26 in Paris to achieve Net Zero greenhouse gas (GHG) emissions by the year of 2060. This plan focuses on transmission into reducing environmental impacts, mainly in big sectors such as construction. Building sector significantly affects energy use and emissions. To support this transmission, Saudi Arabia introduced the MOSTADAM certification as a green building standard specifically designed for Saudi Arabia climate and culture, encouraging energy efficiency, water conservation, and better indoor quality.

The main goal is to look for project management practices for integrating Saudi Arabia's Net Zero GHG 2060 objectives with MOSTADAM certification to set a clear, practical ways to meet these goals. Saudi Arabia urban revolution in the construction industry is expected to reduce its environmental footprint. Project management is one of the most important factors for this transformation. Project Management will help construction teams and stakeholders combine their projects with sustainability goals, using of resources efficiently and meet the standards required by MOSTADAM certification. This study will test specific project management practices that support Net Zero objectives in buildings pursuing MOSTADAM Certification.

Sustainable buildings rating systems have become more wide these days. Internationally famous standards such as LEED and BREEAM have been applied in many countries for years. However, Saudi Arabia published MOSTADAM certification in order to better suit its local criteria. It is known that international standards may not fulfill the challenges of different climates and conditions. MOSTADAM certification covers keystones for energy, water, and resource use that match Saudi Arabia's unique environment and climate. Understanding how project management can support MOSTADAM certification and Net Zero GHG target by 2060 is a key to achieving valuable change.

The study will focus on how the integration between Net zero GHG and Saudi local green building standard objectives with a project management practice can make a combined goal. Which will faster this target and will make it achievable by the year of 2060.

This study aims to identify project management techniques that can be included to guide Saudi Arabia toward Net Zero emissions goal in construction sector. Combining knowledge from previous studies with new findings. The study searches for practical guidance for project managers and standard writers for a more sustainable future.

Study Problem:

Saudi Arabia has committed to achieve Net Zero greenhouse gas (GHG) emissions by 2060 which is a challenge and opportunity for the construction and building sectors to grow sustainable wise. MOSTADAM certification encourages sustainable practices. Therefore, there is a need for clear project management practices that can effectively help the integration of Saudi Arabia GHG goals with the certification's standards. Currently, project management frameworks often lack specific, practical strategies for including these future environmental goals into each stage of construction and building project management.

The primary problem is bridging and reducing the gap between green buildings and GHG emissions using project management approaches. Neglecting this gap for construction projects may miss critical opportunities and might not meet national future sustainability targets.

Importance of the study:

The main idea of the study is how project management can be engaged to achieve strategic goals and making it easier to be applied in a practical way. Finding new ideas using project management can accelerate the results for a combined approach. The study could help project managers and policymakers to understand the importance of Sustainability, Net Zero approach and environment for future generations.

The insights provided in the study might help project managers to integrate the sustainable goals and the net zero GHG objectives in the project scope. The study results expected to make direct benefit to project managers, Sustainability professionals, Policy makers.

Objectives of the study.

1. Identify key objectives of the MOSTADAM certification that align with the Net Zero objectives.
2. Identify practical project management techniques that support the integration of Net Zero GHG objectives into construction projects.
3. Examine sustainability criteria within MOSTADAM certification that align with Net Zero GHG goals.
4. Evaluate the current project management practices used in MOSTADAM certification projects to reduce GHG emissions.
5. Identify training ways for project managers to effectively integrate Net Zero practices in MOSTADAM projects.

Study questions:

1. What are the main objectives for Saudi Arabia's Net Zero GHG 2060 objectives?
2. What are the main objectives of the MOSTADAM certification?
3. How does MOSTADAM certification support sustainable building practices?
4. What role do project managers play in advancing Net Zero objectives within MOSTADAM certification?
5. What improvements could be made to project management practices for sustainability?

Previous studies and theoretical framework:

Recent studies explored for the integration between Sustainable projects and with different green building rating systems in construction sector. In addition, study explored the nations around the world targets for GHG and plans:

1. The study seeks key indicators for sustainability that guarantee succession in construction projects. It focused on sustainability as a complete view in project management. The study created a model for management using different green building rating systems. Delphi method was addressed to rate the sustainable criteria with interviewing for 30 experts in the field. As result of the study, 82 factors were identified for sustainability project management. 27 indicators for considered economics, 18 environmental and 37 for social and Management. (Stanitsas, M., et al 2021).
2. The study describes the gap of long-term effects of Saudi Arabia's climate policies and the Net Zero emissions objectives. Global Change Analysis Model (GCAM) was used, this integrated assessment model explores the interactions among economy, energy, water, land, and climate. The research suggests Saudi Arabia must triple its commitment in Nationally Determined Contributions (NDCs) in order to make the target of 2060 achievable (Puneet Kamboj, M., et al 2024).
3. The study is questioning whether sustainability affects project success. A systematic literature review was conducted for this study. It was figured out that incorporating sustainability with project management might support project success (Amin, P., et al 2020).
4. The paper speaks about programs introduced for Saudi Arabia 2030 vision specifically MOSTADAM Rating System. Generally, MOSTADAM compared to LEED from international US. Green Building standard. Questioning was made about how the transformation for Saudi Arabia sustainability comparing to Local green building standard. The findings of the paper that MOSTADAM Rating System is more suitable the construction field in Saudi Arabia (Sirror, H., et al).
5. Research is focusing on impacts for energy efficiency and its contribution on Carbon emissions along with Net Zero emissions target in Saudi Arabia. Quantile regression models were used and were collected from the year 1971 to the year 2020. The findings of this paper explain how vital carbon dioxide emissions reduction in Saudi Arabia for energy efficiency (Belaïd, F., et al 2023).
6. The research speaks Paris agreement and about challenges for Saudi Arabia to achieve NZE by 2060. Saudi Arabia NZE measurements analyzed and evaluated in this study. It was confirmed that environmental, Social and governance classification

(ESG) in Saudi Arabia will help the government to make NZE targets possible. In addition, It was figured out that the main challenging sectors are concrete and steel industry. (Al-Sinan, M., et al 2023)

7. Paper negotiates how mature project management could affect project execution and intersection with sustainability in project management. A framework created to illustrate assessment of how sustainability can be implemented in project management (Kostalova, J., et al 2021).
8. Article discussed transformation for residential projects in Saudi Arabia fro local sustainable green building standard (MOSTADAM). A framework developed to assist for residential projects to meet the minimum requirements for energy efficiency and water saving. BIM model was used for this study to simulate energy and water measures in case study for villa in Riyadh. 37.5% energy reduction achieved and 26.1% for water achieved which meets the minimum for MOSTADAM Requirement. (Mohamed, S., et al 2022).
9. The study negotiates Saudi 2030 vision by developing standards related to sustainable buildings, since Saudi Arabia targets to be the largest in sustainable buildings. Suggestions provided for a practical strategy can be adopted to support this transformation for the 2030 vision (Balabel, A., et al 2021).
10. Study discussion the consciousness for stakeholders for implementing sustainable buildings rating systems. Qualitative and quantitative research methods was used for study using surveys aimed to experts and stakeholders. A promising results appeared that stakeholders started paying attention to the sustainable rating system and eager to local and international sustainable buildings rating systems (Al-Surf, M., et al 2021).

Theoretical premises of study:

Falling into environmental, social, and economic challenges that could harm future generations. Without sustainable practices, resources will deplete, pollution will increase, and climate-related hazards will become more severe, impacting the quality of life for all humanity and natural life. Sustainability is essential to ensure that we protect our planet, support healthy communities, and build a strong economy for those who will come after us. Sustainability helps classify and prioritize indicators that contribute not only to profitability but also to reducing environmental impact and well-being. This premise supports the study's goal of developing a comprehensive combined approach for sustainable buildings' outcomes.

Recently, construction market in Saudi Arabia considered a huge market from the total market value. Which makes it a great opportunity to advance this sector by making policies standards to support the country's goal and targets. Project management could be the best way to improve the results and revenues for this sector.

Methodology and research methods:

In this study, quantitative surveys will be used for project managers, sustainability experts, engineers, and stakeholders to ensure it will cover different aspects like industry wide for the results, baseline consideration for nowadays practices, measuring if the results are practical, highlight challenges and obstacles.

Furthermore, the study will use Saudi Arabia Standards/Polices to search for common goals in between for MOSTADAM Rating System and Net Zero Emissions plan.

Study Tools:

1. This survey seeks to understand current project management practices, challenges, and opportunities for integrating Net Zero GHG objectives within the MOSTADAM certification framework in Saudi Arabia.
2. Standards analyzing for MOSTADAM certification and GHG policy for Saudi Arabia.

Study Limitation:

There are various limitations for the study that can be summarized as follows:

1. Geographical: study particularly focused in Saudi Arabia region.
2. Industry Sector: study only specified for construction industry.
3. Policies and standards: MOSTADAM Rating System and GHG police.
4. Time: The study duration is 12 weeks.
5. Participants: Project managers, sustainability experts, engineers, and stakeholders.

References:

1. Khalifeh, Amin, Peter Farrell, and Malek Al-edenat. "The impact of project sustainability management (PSM) on project success: A systematic literature review." *Journal of Management Development* 39.4 (2020): 453-474.
2. Stanitsas, Marios, Konstantinos Kirytopoulos, and Vrassidas Leopoulos. "Integrating sustainability indicators into project management: The case of construction industry." *Journal of Cleaner Production* 279 (2021): 123774.
3. Kamboj, Puneet, et al. "The path to 2060: Saudi Arabia's long-term pathway for GHG emission reduction." *Energy Strategy Reviews* 55 (2024): 101537.
4. Sirror, H., et al. "Market Transformation Towards Sustainability in Saudi Arabia: A Comparison Between MOSTADAM And LEED Rating Systems." IOP Conference Series: Earth and Environmental Science. Vol. 1026. No. 1. IOP Publishing, 2022.
5. Belaïd, Fateh, and Camille Massié. "The viability of energy efficiency in facilitating Saudi Arabia's journey toward net-zero emissions." *Energy Economics* 124 (2023): 106765.
6. Al-Sinan, M. A., A. A. Bubshait, and F. Alamri. "Saudi Arabia's Journey toward Net-Zero Emissions: Progress and Challenges. *Energies* 2023, 16, 978." 2023.
7. Kostalova, Jana, and John McGrath. "Sustainability in project management: Two sides of the same coin or poles apart?." Proceedings of the international scientific conference Hradec Economic Days. 2021.
8. Mohamed, Sara Murad. *Greening Existing Residential Buildings in Saudi Arabia with Mostadam as an Objective*. MS thesis. Arizona State University, 2022.
9. Balabel, Ashraf, and Mamdooh Alwetaishi. "Towards sustainable residential buildings in Saudi Arabia according to the conceptual framework of "Mostadam" rating system and vision 2030." *Sustainability* 13.2 (2021): 793.
10. Al-Surf, Mohammed, et al. "Stakeholder's perspective on green building rating systems in Saudi Arabia: The case of LEED, Mostadam, and the SDGs." *Sustainability* 13.15 (2021): 8463.