

Paradigm shifts in project management practices to tackle climate change crisis
(A systematic Literature review from perspective of sustainability in project management)
Developmental paper

Authors: Sona Shadmand, Hazhar Faris, Rehab Iftikhar, Sara Hajikazemi

Abstract

Addressing growing sensitivity to climate change requires effective strategies in project management to respond with this human-driven challenge. While significant research has focused on climate change, it has largely been dominated by physical scientists, with limited emphasis on the role of project management (PM) in fostering environmental sustainability. This study aims to explore how PM practices can be adjusted to support climate change responses. A systematic literature review guides this analysis to achieve research objectives. It is evident from literature that climate change responsive project management requires some shifts in practices due to limitations of current paradigm. This shift involves integrating environmentally sustainable practices and moving from short-term project life cycle objectives toward system-level, product life cycle-oriented solutions. This approach is informed by Kuhn's theory (1962) which explains how paradigms (dominant frameworks for understanding and solving problems) are replaced when they fail to address emerging challenges.

Keywords: climate change, environmental sustainability, project management practices, paradigm shifts

Track: project experiences

Theoretical background

Climate change presents an urgent and transformative challenge, surpassing traditional sustainability frameworks by emphasizing the immediate consequences of human actions (Whyte and Mottee, 2022). It is driven primarily by greenhouse gas emissions, especially CO₂, leading to severe climate phenomena like heatwaves and heavy rains. Mitigation of climate change requires halting CO₂ emissions rapidly (Ipcc, 2021). Global efforts, such as the (Paris Agreement, 2015) aim to limit global temperature rises to 1.5–2°C above pre-industrial levels, though progress, as assessed during COP28, remains insufficient (Un Climate Change, 2023). Therefore, we can acknowledge that business as usual is inadequate for addressing today's climate challenges (Ipcc, 2023). Consequently, there's a growing focus on the concept of transformation in discussions about responses to climate change (O'brien, 2012, Park et al., 2012, O'brien and Sygna, 2013). Project management is not an exception of this move.

Climate change and sustainable development are interconnected, and it has been set as SDG13 or goal 13 by United Nations in 2015 for collective action. While project management has a key role in driving sustainable goals (Silvius and Schipper, 2014, Vedran Zerjav, 2021), effective project management can integrate sustainability considerations like energy use and ecosystem preservation (Whyte and Mottee, 2022).

According to (Colombo and Byer, 2012), addressing climate concerns within project contexts involves a significant degree of uncertainty. It is considered as one of grand challenges “Those wicked, complex, uncertain, messy, boundary-crossing problems that confront the world.” (Ika and Munro, 2022). In response to climate change, there exist two broad approaches, namely adaptation and mitigation, while there's also the option of taking no action, which remains unaffected by climate change considerations. Although the direct connection between climate change and project management has been limited according to (Marcelino-Sádaba et al., 2015), a few research have expanded project management's scope to address grand challenges like climate change (Morris, 2013). According to Morris (2013) integrating environmental practices in project management requires a shift in current paradigms. This shift involves rethinking project management practices, emphasizing transition to operational phases and embracing various project management approaches including agile, hybrid, and traditional methods (Morris, 2013). It also highlights links between projects and broader organizational structures, such as innovation ecosystems and governance frameworks.

Later study by Morris (2017) focuses more on climate responsive project management and profession's role in combating this crisis. Furthermore, a PMI sponsored research by (Zerjav and Konstantinou, 2021) proposes two project management strategies to address climate goals: (1) vanguard projects for developing new technologies and capabilities and (2) embedding sustainable practices in organizational decision-making processes. However, these efforts need alignment between innovative projects and routine practices to meet net-zero objectives effectively. Whyte and Mottee (2022) introduces a more transformative approach, urging project reconceptualization, as interventions in nature. This perspective shifts away from traditional frameworks to foster sustainable project delivery, combat resource depletion, and address climate change challenges. Furthermore, (Ika and Munro, 2022) argue that project management (PM) must evolve to address grand challenges like climate change and they call for new theories, tools, and practices to support these efforts. They add another perspective to current discourse indicating that grand challenges require grand projects which differ from routine mega projects since they face structural, sociopolitical, and emergent complexities, making them resistant to traditional linear PM approaches. These projects require shared leadership across sectors, careful orchestration, and managing competing institutional logics e.g., public vs. private priorities (Ika and Munro, 2022). According to (Ika, 2024) grand

challenges require agile approaches encouraging system thinking, adaptive, collaborative, and experimental mindsets in project teams. Another research indicate that success in grand challenge projects cannot be adequately assessed through traditional project management metrics such as efficiency, cost, or timely delivery. Instead, it should be measured by the long-term, adaptive, and sustainable delivery of meaningful outcomes, particularly those that benefit external stakeholders, including vulnerable communities and future generations (Ika and Saint-Macary, 2023).

The aim of this research is to delve more in project management practices in the light of climate change urging transformation from traditional project-oriented lifecycle management to system level product lifecycle solutions. Research is underpinned by Kuhn's theory of "Scientific Paradigm Shifts". A paradigm, as defined by Kuhn (1962) "is a shared set of assumptions and values within a community that shapes its understanding of reality" (Pollack, 2007). It functions as a lens for understanding phenomena, reflecting comprehensive worldviews that incorporate values and ethical principles (Biedenbach and Müller, 2011). Although grounded in theoretical foundations, paradigms play a crucial role in shaping practical outcomes by directing how individuals interpret, prioritize, and respond to various situations (Pollack, 2007).

Research gap:

Research on climate change has predominantly been led by physical scientists, but effective mitigation and adaptation require management and social science skills as well (Morris, 2017). Paths to environmental sustainability involve both technical and managerial approaches (Abidin and Pasquire, 2007, Marcelino-Sádaba et al., 2015). However, research on the role of project management in tackling climate change remains limited, with most studies focusing on technical or innovation aspects, such as new materials and processes (Wood et al., 2010, Hamzeh et al., 2017, Kattel et al., 2019, Ceres et al., 2017). Managerial approaches to climate action are underexplored (Marcelino-Sádaba et al., 2015, Morris, 2017). Moreover, environmental issues are not systematically addressed in major project management standards, such as PMBOK and APM BOK, leaving mechanisms to integrate climate action in project management weak or absent (Brones et al., 2014).

Research aims and objectives

This research will be focused on understanding the role of project management practices to address climate change from perspective of sustainability in project management. The study strives to transform environmental sustainability objectives into specific actions for project managers. It is worth to mention that while multi-dimensional and holistic nature of the sustainability (economics, social and environmental) is not neglected the research will focus on the environmental pillar of sustainability to address climate change crisis.

To achieve this, we propose the below objectives:

- Exploring environmentally sustainable project management practices to address climate change.
- Identifying required shifts/adjustments in project management practices to tackle this crisis.

Contribution to Knowledge (Theoretical Advancement)

- Bridging a Disciplinary gap in climate change literature, which has traditionally been dominated by the natural sciences and technical disciplines (Marcelino-Sádaba et al., 2015, Morris, 2017). By exploring climate change through the lens of project management, this research offers a cross-disciplinary perspective that is underrepresented in existing scholarship.

- **Paradigm Shift in Project Management Theory:** Grounded in Kuhn's (1962) theory of scientific revolutions, this study contributes to the evolving discourse on paradigm shifts in project management by highlighting how climate change necessitates a shift in practices. It adds conceptual clarity to the debate around integrating environmental sustainability into core project management theory.
- **Identification of Climate-Responsive Practice:** Through a systematic literature review and thematic analysis, the research categorizes and synthesizes climate-responsive project management practices and how environmental sustainability manifests in project management discipline.

Contribution to practice:

- Translating environmental sustainability objectives into specific actions for project managers.
- Informing the revision of educational curricula and industry guidelines, encouraging institutions and professional bodies to incorporate climate action into project management training and certification.

Methodology

The research applies systematic literature review to collect and synthesize qualitative secondary data on the topic. Systematic literature review offers a transparent, reproducible, and rigorous method for analysing large datasets (Cooper et al., 2019). In addition, systematic reviews are useful when we have specific research questions using predefined eligibility criteria and reproducible methods (Gough et al., 2012, Berrang-Ford et al., 2015, Cooper et al., 2019). This approach has become increasingly popular in environmental change research (Berrang-Ford et al., 2011, Lesnikowski et al., 2011, Mcleman, 2011, Lorenz et al., 2014, Berrang-Ford et al., 2015). The interdisciplinary nature of research on coupling (climate change and project management) posed a challenge for the review design. Scopus was selected for this systematic literature review due to its comprehensive coverage and interdisciplinary breadth including coverage across social sciences, environmental studies, engineering, and management (Burnham, 2006, Falagas et al., 2008), making it particularly well-suited for research at the intersection of climate change and project management. Scopus is widely used and preferred in systematic literature reviews due to its wider journal coverage and better metadata quality compared to other databases like Web of Science or Google Scholar (Gusenbauer and Haddaway, 2020).

The literature review process is divided into two phases, the studies selection phase and the thematic analysis phase. First, a bibliographic search was conducted in Scopus. As climate change and sustainability are strongly interrelated, "climate change" or "sustainability" and "Project Manage" were used as basic search words. We initially encountered 4086 articles without applying any criteria. Our search string became more focused by applying inclusion and exclusion criteria reducing number to 1329 articles.

Further screening of articles based on their alignment with the research topic led to a more refined selection limiting review to 114 studies. The search strategy and data extraction with the exact number of papers is illustrated by the PRISMA method in figure 1. The limit of this study is that due to the broad scope of literature covered, it is unlikely that all relevant studies have been identified.

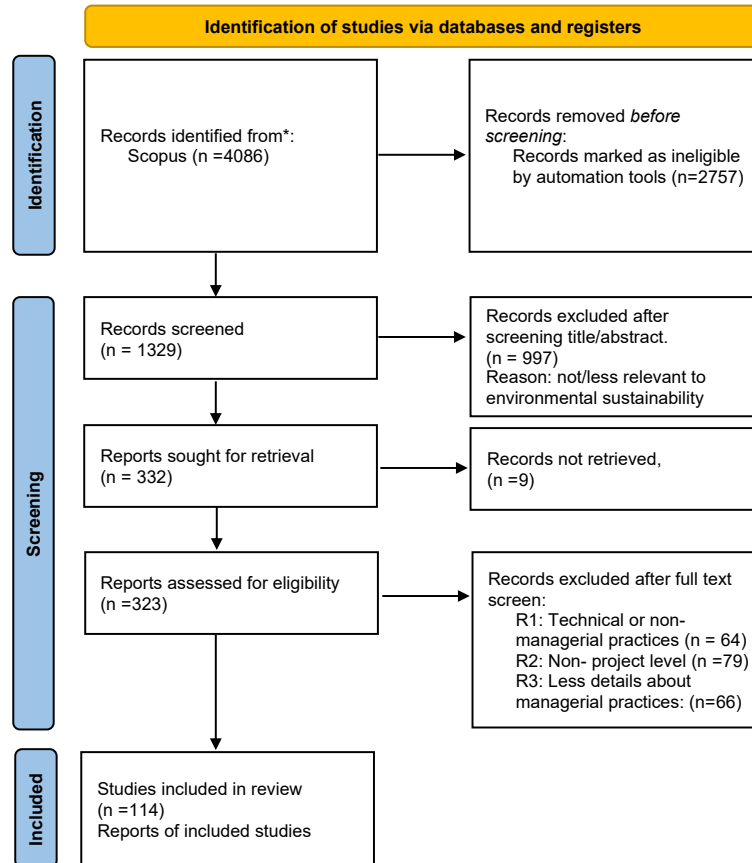


Figure 1: PRISMA flow diagram for systematic literature review.

In the second phase we used thematic analysis to interpret the broad set of identified data within the review.

Summary of Findings

Climate change has transformed doing business as usual (O'brien, 2012, Park et al., 2012) and project management discipline is not an exception of this transition. Our literature review and thematic analysis demonstrates how climate change as an emerging pressure is transforming the project management practices. Our coding system and thematic analysis of literature provides insights around key environmental project management practices demonstrating their frequency on the literature. Addressing first research question our analysis indicates that practices are clustered around climate mitigation and climate adaption strategies (Parry, 2007, Colombo and Byer, 2012). Climate mitigation practices identified in this research according to table 1, include resource management, process management, decision making, intrinsic values and competency development. In addition, our analysis indicates that while climate mitigation is more prevalent approach in project management practices, there is a need to climate adaptive solutions to simultaneously deal with climate change effects in the context of projects for more resilient infrastructure design. According to table 1, Climate adaptive practices are clustered around disaster risk management. The word cloud analysis of coding system (figure 2) illustrates the frequency of practices in climate action demonstrating the importance of waste management, eco efficient material use and stakeholder engagement and collaboration.

Table 1: Coding table and thematic analysis for research question 1 (environmental practices)

Codes	Subthemes	Themes	Number of papers
Waste management and circular economy (reduce. reuse, recycle)	Resource management	Climate mitigation	66
Use of renewable energy			35
Energy Efficiency			54
Green Transportation and optimization			14
Eco efficient material use and optimization			61
Control of carbon emissions /carbon accounting			42
Knowledge management and lessons learned	Process management		12
Environmental regulatory Compliance management			21
Stakeholder engagement and collaboration			57
Extended life cycle management			31
Eco design/green build and procurement			44
Tech/Innovation management (eco innovation)			19
Data transparency and integration by digital technology			18
Quality management			8
Proactive risk management	19		
Project selection criteria and business case for sustainability	Decision Making		21
Project success criteria (Embedding eco-efficient indicators)			34
Life cycle assessment (LCA)			29
Environmental impact assessment (EIA) and reporting			15
Carbon footprint assessment and monitoring			3
Environmental certification (LEED and BREEAM)			21
Optimization-based decision models			10
Integrated assessment tools (MCDM, AHP, Topsis, Fuzzy)			13
Environmental simulation Decision models			3
Flexibility and adaptability in project conditions			7
Sustainability Competency and skill development/training	Intrinsic values and competency development		30
Personal values and Leadership attitude /role of project manager			19
Climate resilient design	Disaster risk management	Climate adaption	10
Design flexibility			3
Infrastructure upkeep and maintenance			3
Stakeholder and community involvement			6

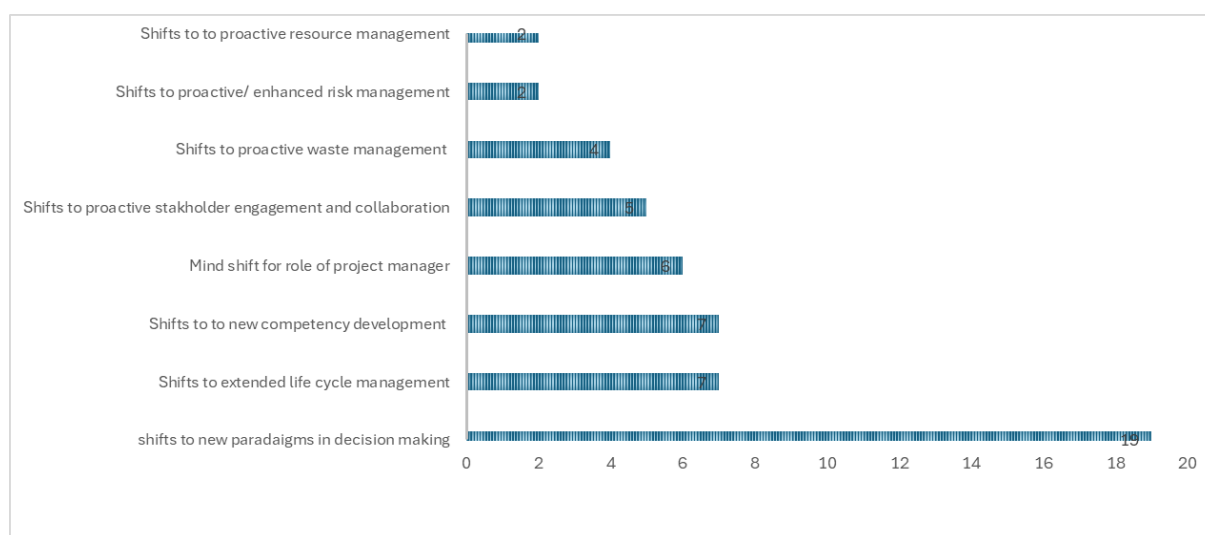
Figure 2: Word cloud analysis for frequency of environmental practices.



Regarding research question 2, it is evident from literature that there are significant shifts in conventional project management practices which are laid on shift from managing project life cycle to more long-term solutions (product lifecycle) for climate change responsive project management. Our review identified 8 shifts to address climate change challenge. They include shifts to proactive waste management, shifts to proactive resource management (Armenia et al., 2019, Petrelli et al., 2023), proactive stakeholder engagement and collaboration (Eskerod and Huemann, 2013, Huemann et al., 2016, Silvius et al., 2017), proactive/enhanced risk management (Martens and Carvalho, 2017, Silvius et al., 2017, Goel et al., 2019), shifts to extended Life cycle approach (Armenia et al., 2019, Willar et al., 2021), shifts to new paradigms in decision making (Ferrarez et al., 2023), new competency development (De La Cruz López et al., 2021, Ershadi and Goodarzi, 2021, Oladokun et al., 2021) and mind shift to central role of project manager (Madureira et al., 2022) in sustainability issues. It is noted that the most significant transformation identified in the literature is in decision-making and project governance. Thematic analysis reveals a dominant trend toward redefining project success through sustainability-aligned criteria and the integration of environmental assessment tools, such as life cycle assessment (LCA), environmental impact assessment (EIA), and carbon footprint monitoring (Silvius et al., 2017; Fang et al., 2023).

In addition, the frequent emergence of proactive approaches in the identified shifts underscores the relevance of previous studies advocating for more flexible, adaptable, and less structured project management methods (Ika, 2024, Morris, 2013) like agile. These approaches are particularly important for addressing highly complex problems, such as climate change, through project-based work revealing a strong alignment with proactive strategies, reinforcing the call for agile and adaptive project management frameworks, as emphasized by earlier research.

Figure 3: Frequency of identified shifts in project management practices to address climate change



Meanwhile, our thematic analysis indicates that climate adaptation—compared to mitigation—is underrepresented in project management research calling for further research in future. Climate adaptation is primarily confined to disaster risk management, with frequency of maximum 10 papers identified in that area, indicating a significant gap in integrating adaptive strategies in PM frameworks. Also, we argue that the current body of climate adaptation literature tends to prioritize technical and engineering-focused solutions over managerial practices and frameworks. These studies often focus on physical system adjustments like

modelling climate impacts, or enhancing building design rather than organizational or managerial system reforms (Berrang-Ford et al., 2011) neglecting the role of uncertainty management, stakeholder coordination, or adaptive decision-making processes that fall under the purview of project management. All in all, while adaptation inherently involves uncertainty and long-term planning, which are core project management challenges, such aspects are rarely discussed from a management science perspective. This creates a gap in integrating flexibility, learning, stakeholder engagement, and lifecycle planning as critical components of adaptive project management.

Finally, it is evident across both climate mitigation and adaptation strategies that project management scope should extend beyond project completion (to operation phase) highlighted by (Morris, 2013) and there is growing recognition that project management must account for the long-term environmental and social impacts of the assets it creates (Labuschagne and Brent, 2005; Silvius and Schipper, 2014; Armenia et al., 2019).

Conclusion:

This study highlights that climate change is a transformative force reshaping project management practices across sectors. Through a thematic analysis of existing literature of 114 papers, we identified two dominant streams of environmental practices: climate mitigation and climate adaptation. While mitigation practices such as waste management, stakeholder engagement, and decision-making tools are increasingly embedded in project management, adaptation practices remain underrepresented and narrowly focused on technical interventions.

Significant shifts in conventional project management approaches are also evident. These include transitions towards proactive strategies, extended life cycle thinking, and redefined success criteria that align with environmental sustainability goals. Particularly, decision-making and governance structures are evolving to incorporate tools like life cycle assessments (LCA), environmental impact assessments (EIA), and carbon monitoring, supporting a broader sustainability agenda.

Despite this progress, our review reveals critical gaps—most notably the limited integration of adaptive climate strategies into project management frameworks. The current focus leans heavily toward mitigation and engineering solutions, often neglecting managerial and organizational capacities essential for effective adaptation. This highlights the need for project management to evolve toward more flexible, agile, and resilience-oriented methodologies that can address uncertainty and long-term climate risks.

To advance knowledge and bridge the existing gaps, we recommend the following research directions:

- To conduct Empirical Studies on Climate Action in Project Management: to validate findings and develop a Conceptual Framework for Climate-Responsive Project Management.
- To expand Research on Adaptive Project Management: Practices that can be effectively embedded in project management practices, particularly in climate-sensitive sectors like infrastructure, energy, and urban development.
- To examine Post-Completion Impacts and Lifecycle Thinking: Future research should assess how projects account for long-term environmental and social impacts beyond completion, including the integration of maintenance, decommissioning, and operation phases into sustainability planning.

References:

- Abidin, N. Z. & Pasquire, C. L. 2007. Revolutionize value management: A mode towards sustainability. *International Journal of Project Management*, 25, 275-282.
- Armenia, S., Dangelico, R. M., Nonino, F. & Pompei, A. 2019. Sustainable project management: A conceptualization-oriented review and a framework proposal for future studies. *Sustainability*, 11, 2664.
- Berrang-Ford, L., Ford, J. D. & Paterson, J. 2011. Are we adapting to climate change? *Global environmental change*, 21, 25-33.
- Berrang-Ford, L., Pearce, T. & Ford, J. D. 2015. Systematic review approaches for climate change adaptation research. *Regional Environmental Change*, 15, 755-769.
- Biedenbach, T. & Müller, R. 2011. Paradigms in project management research: examples from 15 years of IRNOP conferences. *International journal of managing projects in business*, 4, 82-104.
- Brones, F., De Carvalho, M. M. & De Senzi Zancul, E. 2014. Ecodesign in project management: a missing link for the integration of sustainability in product development? *Journal of Cleaner Production*, 80, 106-118.
- Burnham, J. F. 2006. Scopus database: a review. *Biomedical digital libraries*, 3, 1-8.
- Ceres, R. L., Forest, C. E. & Keller, K. 2017. Understanding the detectability of potential changes to the 100-year peak storm surge. *Climatic Change*, 145, 221-235.
- Colombo, A. F. & Byer, P. H. 2012. Adaptation, flexibility and project decision-making with climate change uncertainties. *Impact Assessment and Project Appraisal*, 30, 229-241.
- Cooper, H., Hedges, L. V. & Valentine, J. C. 2019. *The handbook of research synthesis and meta-analysis*, Russell Sage Foundation.
- De La Cruz López, M. P., Cartelle Barros, J. J., Del Caño Gochi, A. & Lara Coira, M. 2021. New approach for managing sustainability in projects. *Sustainability*, 13, 7037.
- Ershadi, M. & Goodarzi, F. 2021. Core capabilities for achieving sustainable construction project management. *Sustainable Production and Consumption*, 28, 1396-1410.
- Eskerod, P. & Huemann, M. 2013. Sustainable development and project stakeholder management: What standards say. *International Journal of Managing Projects in Business*, 6, 36-50.
- Falagas, M. E., Pitsouni, E. I., Malietzis, G. A. & Pappas, G. 2008. Comparison of PubMed, Scopus, web of science, and Google scholar: strengths and weaknesses. *The FASEB journal*, 22, 338-342.
- Ferrarez, R. P., Valle, C. G. D., Alvarenga, J. C., Dias, F. D. C., Vasco, D. A., Guedes, A. L., Chinelli, C. K., Haddad, A. N. & Soares, C. A. 2023. Key Practices for Incorporating Sustainability in Project Management from the Perspective of Brazilian Professionals. *Sustainability*, 15, 8477.
- Goel, A., Ganesh, L. & Kaur, A. 2019. Sustainability integration in the management of construction projects: A morphological analysis of over two decades' research literature. *Journal of Cleaner Production*, 236, 117676.
- Gough, D., Thomas, J. & Oliver, S. 2012. Clarifying differences between review designs and methods. *Systematic reviews*, 1, 1-9.
- Gusenbauer, M. & Haddaway, N. R. 2020. Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 other resources. *Research synthesis methods*, 11, 181-217.
- Hamzeh, F., Abdul Ghani, O., Saleh Bacha, M. B. & Abbas, Y. 2017. Modular concrete construction: The differing perspectives of designers, manufacturers, and contractors in Lebanon. *Engineering, Construction and Architectural Management*, 24, 935-949.
- Huemann, M., Eskerod, P. & Ringhofer, C. 2016. *Rethink!: Project stakeholder management*, Project Management Institute, Incorporated.
- Ika, L. & Saint-Macary, J. 2023. *Managing fuzzy projects in 3D: a proven, multi-faceted blueprint for overseeing complex projects*, McGraw Hill Professional.
- Ika, L. A., & Munro, L. T. 2024. How project management can help tackle world-scale challenges. In Brightline Initiative of Project Management Institute and Thinkers50 (Eds.) *The Sustainable Innovation Playbook: Strategies for Doing Well while Doing Good*. .

- Ika, L. A. & Munro, L. T. 2022. Tackling grand challenges with projects: Five insights and a research agenda for project management theory and practice. *International Journal of Project Management*, 40, 601-607.
- Ipcc, C. C. 2007. Climate change 2007, impacts adaption and vulnerability.
- Ipcc, C. C. 2023. Climate change 2023, Synthesis Report: Summary for policy makers.
- Ipcc, C. C. I. D. E. 2021. *CLIMATE CHANGE IN DATA : EXTRAS*
- Climate Change 2021: The Physical Science Basis* [Online]. IPCC Available: <https://www.ipcc.ch/report/ar6/wg1/resources/climate-change-in-data/> [Accessed 2025].
- Ipcc, C. C. S. R. 2014. Climate change 2014 synthesis report.
- Kattel, G. R., Shang, W., Wang, Z. & Langford, J. 2019. China's south-to-north water diversion project empowers sustainable water resources system in the north. *Sustainability*, 11, 3735.
- Kuhn, T. S. 1962. The structure of scientific revolutions. *University of*, 965.
- Lesnikowski, A., Ford, J., Berrang-Ford, L., Paterson, J., Barrera, M. & Heymann, S. 2011. Adapting to health impacts of climate change: a study of UNFCCC Annex I parties. *Environmental Research Letters*, 6, 044009.
- Lorenz, S., Berman, R., Dixon, J. & Lebel, S. 2014. Time for a systematic review: A response to Bassett and Fogelman's "Déjà vu or something new? The adaptation concept in the climate change literature". *Geoforum*, 51, 252-255.
- Madureira, R. C., Silva, C. S., Amorim, M., Ferreira Dias, M., Lins, B. & Mello, G. 2022. Think twice to achieve a sustainable project management: from ecological sustainability towards the sustainable project management cube model. *Sustainability*, 14, 3436.
- Marcelino-Sádaba, S., González-Jaen, L. F. & Pérez-Ezcurdia, A. 2015. Using project management as a way to sustainability. From a comprehensive review to a framework definition. *Journal of cleaner production*, 99, 1-16.
- Martens, M. L. & Carvalho, M. M. 2017. Key factors of sustainability in project management context: A survey exploring the project managers' perspective. *International journal of project management*, 35, 1084-1102.
- Mcleman, R. A. 2011. Settlement abandonment in the context of global environmental change. *Global Environmental Change*, 21, S108-S120.
- Morris, P. 2013. Reconstructing project management reprised: A knowledge perspective. *Project Management Journal*, 44, 6-23.
- Morris, P. W. 2017. *Climate Change and what the Project Management Profession Should be Doing About It: A UK Perspective*, Association for Project Management.
- O'brien, K. 2012. Global environmental change II: From adaptation to deliberate transformation. *Progress in human geography*, 36, 667-676.
- O'brien, K. & Sygna, L. 2013. Responding to climate change: the three spheres of transformation. *Proceedings of transformation in a changing climate*, 16, 23.
- Oladokun, M. G., Isang, I. W. & Emuze, F. 2021. Towards sustainability practices deployment in building construction projects in Nigeria. *Smart and Sustainable Built Environment*, 10, 759-780.
- Paris Agreement, U. N. 2015. Paris agreement.
- Park, S. E., Marshall, N. A., Jakku, E., Dowd, A. M., Howden, S. M., Mendham, E. & Fleming, A. 2012. Informing adaptation responses to climate change through theories of transformation. *Global Environmental Change*, 22, 115-126.
- Parry, M. L. 2007. *Climate change 2007-impacts, adaptation and vulnerability: Working group II contribution to the fourth assessment report of the IPCC*, Cambridge University Press.
- Petrelli, M. Z., Pacagnella, A. C., Ignacio, P. S. D. A., Rampasso, I. S., Anholon, R. & Bortoletto, W. W. Sustainable practices in construction project management: impacts on triple bottom line. *Proceedings of the Institution of Civil Engineers-Engineering Sustainability*, 2023. Emerald Publishing Limited, 150-161.
- Pollack, J. 2007. The changing paradigms of project management. *International journal of project management*, 25, 266-274.
- Silvius, A. & Schipper, R. P. 2014. Sustainability in project management: A literature review and impact analysis. *Social business*, 4, 63-96.

- Silvius, A. G., Kampinga, M., Paniagua, S. & Mooi, H. 2017. Considering sustainability in project management decision making; An investigation using Q-methodology. *International Journal of Project Management*, 35, 1133-1150.
- Un Climate Change, K. W. 2023. COP28 Agreement Signals “Beginning of the End” of the Fossil Fuel Era. Available: <https://unfccc.int/news/cop28-agreement-signals-beginning-of-the-end-of-the-fossil-fuel-era> [Accessed 10/02/2025].
- Vedran Zerjav, E. K. 2021. Extending Project Practices for the Future of the Profession.
- Whyte, J. & Mottee, L. 2022. Projects as interventions. *International Journal of Project Management*, 40, 934-940.
- Willar, D., Waney, E. V. Y., Pangemanan, D. D. G. & Mait, R. E. G. 2021. Sustainable construction practices in the execution of infrastructure projects: The extent of implementation. *Smart and Sustainable Built Environment*, 10, 106-124.
- Wood, M. D. L., Mathieux, F., Brissaud, D. & Evrard, D. 2010. Results of the first adapted design for sustainability project in a South Pacific small island developing state: Fiji. *Journal of Cleaner Production*, 18, 1775-1786.