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Original Research Article

Continuous Improvement and Sustainability Integration in Project Quality Management Systems

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Abstract: Saudi Arabia's Vision 2030 infrastructure transformation requires project quality management systems (PQMS) that do more than control defects at inspection points. Mega projects must deliver compliant assets while reducing rework, material waste, delay, environmental impact and handover risk. This review paper examines how continuous improvement and sustainability can be integrated into PQMS for mega infrastructure projects in Saudi Arabia. It positions quality management as a strategic governance function that links ISO 9001-based process control, risk-based quality planning, inspection and test plans, non-conformance management, supplier quality assurance, digital traceability, corrective and preventive action, and management review with sustainability objectives such as resource efficiency, waste reduction, lifecycle value and responsible procurement. The study adopts a structured narrative review of recent literature on quality management systems, sustainable construction, Lean construction, Quality 4.0, project governance and Saudi Vision 2030 infrastructure delivery. It proposes a sustainability-integrated PQMS framework and an implementation roadmap tailored to roads, airports, tunnels, bridges, utilities and high-profile giga-project environments. The paper argues that continuous improvement tools, including PDCA, root-cause analysis, Kaizen, Six Sigma, NCR trend analysis and lessons-learned loops, can convert quality records into sustainability outcomes when they are embedded in project governance and supported by measurable KPIs. The expected contribution is a practical model for client, PMC, consultant, contractor and supplier organisations seeking to align quality excellence with sustainable infrastructure delivery. The framework supports reduced NCR recurrence, lower rework, stronger compliance, better supplier performance, improved handover readiness and enhanced long-term asset value under Saudi Vision 2030.

Keywords: Project quality management system; continuous improvement; sustainability integration; Saudi Vision 2030; construction quality; ISO 9001; NCR; CAPA; Lean construction; mega infrastructure projects.

1. INTRODUCTION

Saudi Arabia's infrastructure development agenda under Vision 2030 is reshaping the scale, governance and performance expectations of construction delivery (Saudi Vision 2030, 2025; Public Investment Fund, 2024). Giga-projects, transport corridors, airports, tunnels, bridges, utilities, luxury hospitality assets and mixed-use

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districts are no longer judged only by completion of physical works. They are also expected to demonstrate compliance, durability, stakeholder confidence, resource efficiency, lower waste and long-term asset value. Project quality management is therefore moving from a narrow inspection function to a strategic management system that protects schedule, cost, safety, sustainability and reputation.

In mega infrastructure projects, poor quality has sustainability consequences. Rework consumes extra concrete, asphalt, steel, labour, energy, fuel, water and equipment hours. Repeated non-conformances delay handover, generate waste, increase emissions and create contractual disputes. Quality failures may also weaken public trust when projects are connected to national transformation programmes. Conversely, strong quality governance reduces unnecessary resource consumption, improves traceability and increases confidence that assets will perform throughout their lifecycle. This connection between quality and sustainability is especially relevant in Saudi Arabia, where large projects often operate under complex stakeholder structures involving clients, project management consultants, design consultants, supervision teams, contractors, subcontractors, suppliers and regulatory authorities.

Traditional project quality management systems commonly include project quality plans, inspection and test plans, audits, material approvals, method statement review, NCR management, corrective action and handover documentation. These controls are essential, but they are often implemented as separate compliance tasks rather than as an integrated continuous improvement system. Sustainability requirements may also be handled by separate environmental or ESG teams. The result is fragmentation: quality teams may focus on defect closure, while sustainability teams focus on reporting, and project managers focus on cost and schedule. A sustainability-integrated PQMS attempts to connect these functions so that every inspection, audit, NCR, supplier review and management review contributes to both quality performance and sustainable delivery.

The aim of this paper is to develop a review-based framework for integrating continuous improvement and sustainability into project quality management systems for Saudi mega infrastructure projects. The paper is relevant to quality managers, QA/QC engineers, project directors, PMC organisations, contractors and suppliers working in high-complexity infrastructure environments. It focuses on practical mechanisms that can be embedded into project governance, including risk-based planning, digital evidence management, lifecycle-oriented KPIs, NCR trend analysis, root-cause learning and supplier quality assurance.

2. AIM, OBJECTIVES AND RESEARCH QUESTIONS

The aim of the study is to examine how continuous improvement and sustainability principles can be integrated into PQMS to enhance project delivery performance in Saudi mega infrastructure projects. The study recognises quality as a system of prevention, learning and governance rather than a final-stage inspection activity.

The objectives are to: (1) review the relationship between quality management, continuous improvement and sustainability in construction; (2) identify the quality processes that can generate sustainability value in infrastructure delivery; (3) propose a sustainability-integrated PQMS framework suitable for Saudi giga-project environments; (4) define practical KPIs for monitoring quality and sustainability together; and (5) provide an implementation roadmap that can be adapted by client, PMC, consultant, contractor and supplier organisations.

The paper is guided by three research questions. First, how can continuous improvement methods be embedded in construction PQMS to reduce recurring NCRs and rework? Second, how can sustainability objectives such as waste reduction, resource efficiency and lifecycle value be translated into quality planning, inspection, audit and supplier assurance processes? Third, what governance model can help Saudi mega infrastructure projects align quality excellence with Vision 2030 outcomes?

3. METHODOLOGY

This study adopts a structured narrative review methodology. A narrative review is appropriate because the topic sits across multiple knowledge domains: quality management systems, construction project management, sustainability, Lean construction, project controls, digital transformation and Saudi Vision 2030 development. The review does not attempt to statistically aggregate results. Instead, it synthesises concepts and practices from recent literature and standards to develop a practical framework for project application.

The literature scope focused on publications and institutional sources from 2020 to 2025, with selected foundational standards such as ISO 9001 included because they remain central to QMS implementation. The search themes included project quality management systems, sustainable construction, continuous improvement, Lean construction, Quality 4.0, construction rework, non-conformance management, digital QA/QC, supplier quality assurance and sustainability performance indicators. Sources were screened for relevance to infrastructure projects, construction management and quality governance. Priority was given to peer-reviewed journal articles, international standards, project management guidance and official Saudi Vision 2030 or PIF sources.

The synthesis followed four stages. First, the literature was mapped into themes: quality governance, continuous improvement, sustainability integration, digital traceability and supplier assurance. Second, quality processes were linked to sustainability outcomes. For example, NCR prevention was linked to material waste reduction; supplier audits were linked to responsible procurement; and handover documentation was linked to lifecycle asset management. Third, a conceptual framework was developed to show how sustainability objectives can be embedded into PQMS processes. Fourth, the framework was converted into an implementation roadmap and KPI set suitable for mega infrastructure projects.

4. Literature Review: Quality Management and Sustainability in Construction

Quality management systems provide an organised approach for defining processes, responsibilities, records, controls, audits and improvement mechanisms (International Organization for Standardization, 2015). ISO 9001 emphasises customer focus, leadership, engagement of people, process approach, improvement, evidence-based decision-making and relationship management. These principles align strongly with project environments where multiple organisations must deliver a common asset under contractual and regulatory conditions. In construction, however, QMS implementation is often challenged by temporary project structures, changing work fronts, design revisions, subcontractor dependency, site conditions and schedule pressure.

Sustainability in construction traditionally focuses on reducing environmental impact, improving resource efficiency, protecting communities and delivering long-term social and economic value (UN Environment Programme, 2022; Waqar et al., 2025). For infrastructure projects, sustainability also includes durability, maintainability, resilience, responsible supply chains and efficient handover to operations. These goals require reliable quality processes. A road pavement that fails early, a tunnel waterproofing system with recurring defects or a building system with incomplete commissioning evidence can create sustainability losses over the asset lifecycle. Therefore, sustainability cannot be treated only as a separate reporting requirement; it must be built into technical quality control and project governance.

Recent research on sustainable construction highlights integrated management systems, Lean construction, lifecycle thinking, digital technologies and collaborative governance as important enablers (Garcés et al., 2025; Waqar et al., 2025). Lean construction connects directly to sustainability because it targets waste, variation and inefficient workflow. Quality management contributes by preventing defects, reducing variation and standardising best practice. Quality 4.0 research further suggests that digital tools can strengthen quality systems by improving traceability, real-time monitoring and data-driven decision-making (Baran & Korkusuz Polat, 2022; Carvalho et al., 2024; Ghansah & Edwards, 2024). In mega projects, these ideas are particularly valuable because manual quality processes can become overwhelmed by the volume of inspections, documents, suppliers and interfaces.

The literature also shows that continuous improvement is essential for sustainable project outcomes (Siva et al., 2016; Sony et al., 2020). A PQMS that merely records NCRs is reactive. A PQMS that analyses trends, identifies recurring causes, verifies corrective actions and updates future controls becomes preventive. This distinction is important because sustainability value is created primarily by prevention. Preventing rework avoids waste before it occurs; preventing supplier defects avoids transport, storage and replacement impacts; and preventing incomplete handover avoids operational inefficiencies. Continuous improvement is therefore the practical bridge between quality management and sustainability.

5. Project Quality Management Systems in Mega Infrastructure Projects

A project quality management system translates corporate quality policy and project-specific requirements into operational controls (International Organization for Standardization, 2015; Project Management Institute, 2021). Key components include the project quality plan, document control procedure, inspection and test plans, method statement review, material approval process, testing and commissioning requirements, NCR and CAR procedures, audit programme, quality KPIs, training records and handover requirements. In complex projects, these elements must be aligned across disciplines such as civil works, roads, bridges, tunnels, utilities, airport systems, MEP, architecture, fire and life safety, and commissioning.

The PQMS must be risk-based (International Organization for Standardization, 2015; Project

Management Institute, 2021). Not every activity carries the same quality or sustainability risk. High-risk activities may include concrete placement, asphalt pavement, waterproofing, structural connections, tunnel lining, bridge bearings, fire systems, underground utilities, airport pavement works and critical supplier manufacturing. A risk-based PQMS assigns more rigorous controls to high-risk items through hold points, witness points, method statement review, first-article inspections, mock-ups, supplier audits and increased testing frequency. This approach supports sustainability because it allocates resources where prevention has the greatest value.

Another essential feature is traceability, which digital quality management literature identifies as a core value of modern construction QA/QC systems (Luo et al., 2022; Ghansah & Edwards, 2024). Construction projects generate large amounts of evidence: inspection requests, test certificates, calibration records, material approvals, delivery notes, photographs, geotagged observations, audit findings, NCRs, design clarifications and handover dossiers. When evidence is fragmented, teams struggle to understand whether an asset is truly compliant. Traceability connects each record to a location, asset ID, work package, specification clause, drawing revision and responsible party. This improves compliance while also supporting lifecycle asset management.

Supplier quality assurance is central to PQMS performance, especially where multi-tier supply chains influence quality, waste and responsible procurement outcomes (Siva et al., 2016; Waqar et al., 2025). Many sustainability and quality failures originate before materials reach the site. Supplier prequalification, factory audits, technical submittal review, factory acceptance testing, delivery inspection and supplier scorecards help ensure that materials and equipment conform to requirements. In Saudi mega projects, where procurement may involve local and international supply chains, supplier quality assurance can reduce risk, avoid replacement waste and strengthen responsible procurement.

6. Continuous Improvement Mechanisms

Continuous improvement converts project quality data into learning and is consistent with the improvement principle of ISO 9001 and modern Quality 4.0 thinking (International Organization for Standardization, 2015; Kumar et al., 2022). The Plan-Do-Check-Act cycle remains one of the most practical improvement models. In the planning stage, the project defines quality objectives, sustainability targets, risk registers, inspection controls and KPIs. In the doing stage, teams implement the PQMS through inspections, audits, testing, supplier controls and site surveillance. In the checking stage, performance data is reviewed through NCR trends, audit scores, rework logs, material waste statistics and handover progress. In the acting stage, lessons are translated into revised checklists, improved method statements, additional training, procurement controls or design coordination actions.

Root-cause analysis is a critical continuous improvement tool because recurring defects are often symptoms of deeper system failures rather than isolated workmanship issues (Project Management Institute, 2021; Zhang et al., 2024). Many construction quality problems recur because teams close the visible defect without addressing the underlying system weakness. For example, a recurring concrete defect may be caused not only by workmanship but also by inadequate mix control, insufficient curing protection, poor formwork preparation, rushed inspection, unclear responsibility or supplier inconsistency. RCA methods such as five whys, fishbone analysis, Pareto charts and failure mode thinking help teams identify causes that can be prevented. Corrective and preventive action then becomes a mechanism for sustainable performance improvement.

Kaizen and Lean practices can strengthen PQMS by encouraging small, frequent improvements at the workface, which is consistent with Lean construction emphasis on waste reduction, collaboration and flow reliability (Garcés et al., 2025). Site teams often know where waste, waiting, rework and quality risks occur. Structured improvement meetings, quality walkdowns, visual management boards and short-cycle lessons learned can capture this knowledge. Six Sigma tools can be applied where variation is measurable, such as concrete strength results, asphalt compaction, laboratory turnaround time, inspection rejection rates or NCR closure duration. The key is to use improvement tools pragmatically rather than as administrative exercises.

Management review gives continuous improvement authority. Quality data must reach senior project decision-makers, not remain within the QA/QC department. When project directors and package managers review NCR recurrence, supplier performance, sustainability impacts and audit trends together, they can allocate resources to systemic issues. This supports the idea that quality is not merely a technical compliance function; it is an executive governance function that affects cost, schedule, sustainability and client confidence.

7. Sustainability Integration within PQMS

Sustainability integration begins by translating sustainability objectives into project quality controls, a practice supported by research linking quality management with sustainable development initiatives (Siva et al., 2016; Waqar et al., 2025). A sustainability target such as waste reduction must be expressed in practical quality terms: accurate material approval, reduced rework, correct first-time installation, controlled storage, approved method statements, mock-up acceptance, inspection readiness and supplier compliance. Resource efficiency should be linked to quality planning because poor quality consumes additional materials and energy. Lifecycle value should be linked to handover quality, commissioning evidence and maintainability reviews.

The project quality plan should include sustainability-related quality objectives. Examples include reducing NCR recurrence, improving first-time inspection acceptance, reducing rejected materials, increasing closure effectiveness, improving supplier conformance and ensuring complete handover evidence. Inspection and test plans can include sustainability-sensitive checkpoints, such as material traceability, recycled content verification, waste segregation, protection of completed works, curing methods, durability requirements and prevention of damage during storage or installation. Method statements can include quality controls that reduce environmental impact, such as efficient material handling, protection against contamination and minimisation of avoidable rework.

Audit programmes can also be designed to integrate sustainability, reflecting the wider movement from isolated compliance auditing to integrated management systems (International Organization for Standardization, 2015; International Organization for Standardization, 2015a). Traditional quality audits check whether procedures are followed. Integrated audits can also examine whether the procedure contributes to sustainability outcomes. For example, an audit may assess whether rejected materials are being tracked, whether NCR recurrence is causing waste, whether suppliers meet documentation and sustainability requirements, or whether quality records support lifecycle asset management. This makes sustainability part of the same evidence-based governance system rather than an isolated reporting layer.

Handover is another important point of integration. Sustainable infrastructure depends on reliable operation and maintenance. If as-built drawings, test certificates, commissioning records, warranties, O&M manuals and defect clearance records are incomplete, the operator inherits risk. A sustainability-integrated PQMS therefore treats handover readiness as a quality and sustainability KPI. Good handover documentation improves maintainability, reduces future corrective work and supports asset performance throughout the lifecycle.

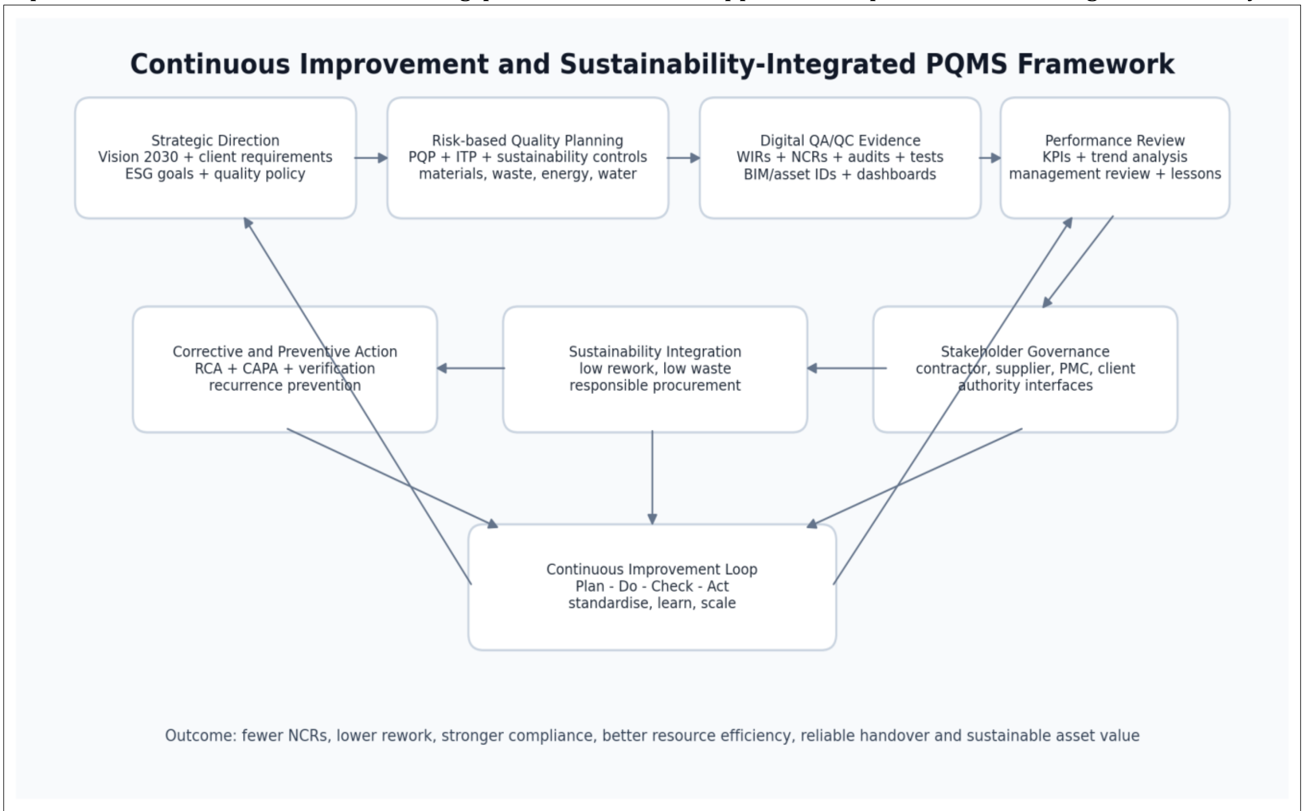

Figure 1: Sustainability-integrated PQMS framework for Saudi mega infrastructure projects

8. Proposed Sustainability-Integrated PQMS Framework

The proposed framework shown in Figure 1 consists of eight connected elements and synthesises ISO-based quality governance, Lean improvement and digital QA/QC literature: strategic direction, risk-based quality planning, digital QA/QC evidence, performance review, corrective and preventive action, sustainability integration, stakeholder governance and the continuous improvement loop. The framework begins with strategic alignment. Project quality policy and objectives should reflect Vision 2030, client requirements, contract specifications, regulatory requirements and project sustainability commitments. Without this alignment, sustainability remains a separate narrative rather than a measurable part of project quality governance.

Risk-based quality planning is the second element. It translates objectives into project quality plans, inspection and test plans, method statements, supplier quality plans and audit schedules. Sustainability controls are embedded at this stage so that resource efficiency and lifecycle quality are considered before work starts. Digital QA/QC evidence is the third element, reflecting research that identifies data collection, decision-oriented technologies, collaboration platforms and transparency tools as central to construction quality assurance (Ghansah & Edwards, 2024). It connects inspection records, NCRs, audit findings, test results, photographs and handover documents to asset IDs, BIM models or document control systems. This traceability enables accurate performance review.

The fourth element is performance review. Project teams should analyse quality and sustainability KPIs together. For example, an increasing NCR trend in concrete works should be reviewed not only as a compliance issue but also as a potential waste, cost and schedule issue. The fifth element is corrective and preventive action. RCA and CAPA should focus on preventing recurrence and verifying effectiveness. The sixth element is sustainability integration, which ensures that quality improvements are linked to lower waste, responsible procurement, better durability and improved lifecycle value. The seventh element is stakeholder governance, because quality and sustainability cannot be delivered by one party alone. Contractors, consultants, suppliers, PMCs, clients and authorities must share common evidence and escalation channels.

The final element is the continuous improvement loop. Lessons from one work package should be standardised and transferred to other packages. This is critical in giga-projects where similar defects may occur across multiple zones or contractors. A learning loop allows a road package, bridge package, tunnel package or airport package to benefit from improvements developed elsewhere. In this way, the PQMS becomes a programme-level knowledge system, not merely a project archive.

Table 1: Integration matrix linking PQMS processes with continuous improvement and sustainability outcomes

PQMS process	Continuous improvement action	Sustainability linkage	Suggested evidence
Risk-based quality planning	Prioritise critical work activities and high-risk interfaces before execution.	Prevents high-impact defects that generate rework, material waste and schedule loss.	Risk register, PQP, ITP matrix, method statement review log.
Inspection and test plans	Review first-time acceptance, repeated rejection and readiness before inspection.	Reduces unnecessary inspections, rework visits and repeated resource use.	WIR status, test reports, hold-point records, dashboard trends.
NCR and CAPA management	Apply RCA, assign owners and verify effectiveness before formal closure.	Prevents recurrence and reduces waste from repeated defects.	NCR log, RCA sheet, CAPA plan, recurrence analysis.
Supplier quality assurance	Use audits, scorecards and source inspection to control quality before delivery.	Avoids rejected materials, replacement transport and procurement waste.	Supplier audit reports, FAT records, material approvals, scorecards.
Handover and closeout	Track asset-level evidence completeness and lessons learned before turnover.	Supports maintainability, lifecycle value and lower operational corrective work.	Handover dossier, as-built register, commissioning records, O&M manuals.

9. Implementation Roadmap

Figure 2 presents a six-step implementation roadmap. The first step is baseline assessment. The project should review existing PQMS documents, NCR trends, audit findings, rework logs, supplier performance, handover status and sustainability reports. The purpose is to identify where quality failures are creating sustainability losses. The second step is integration. Sustainability controls should be embedded into PQP, ITPs, method statements, material approval processes, supplier audits and handover checklists.

The third step is digitisation. Digital evidence improves traceability and reduces the risk of missing or inconsistent records. The project may use document control systems, inspection management platforms, dashboards, QR-coded asset records, BIM-linked quality records or mobile inspection tools. The fourth step is improvement. Teams should apply RCA, CAPA, Kaizen, Lean and Six Sigma methods to recurring issues. The fifth step is verification. Corrective actions should not be closed only because a document has been submitted. Closure should require evidence that the action has reduced recurrence or addressed the root cause. The sixth step is scaling. Lessons should be converted into standard procedures, revised checklists, training content and supplier feedback for other packages or future projects.

Implementation should be phased because digital transformation and Quality 4.0 capability development require staged maturity building rather than one-time technology adoption (Carvalho et al., 2024; Plekhanov et al., 2023). A project may start with manual KPI dashboards and integrated audit checklists, then gradually introduce digital traceability and predictive analytics. The most important requirement is governance discipline. Even advanced digital tools will not create improvement if NCR descriptions are weak, root-cause analysis is superficial or management review does not lead to action.

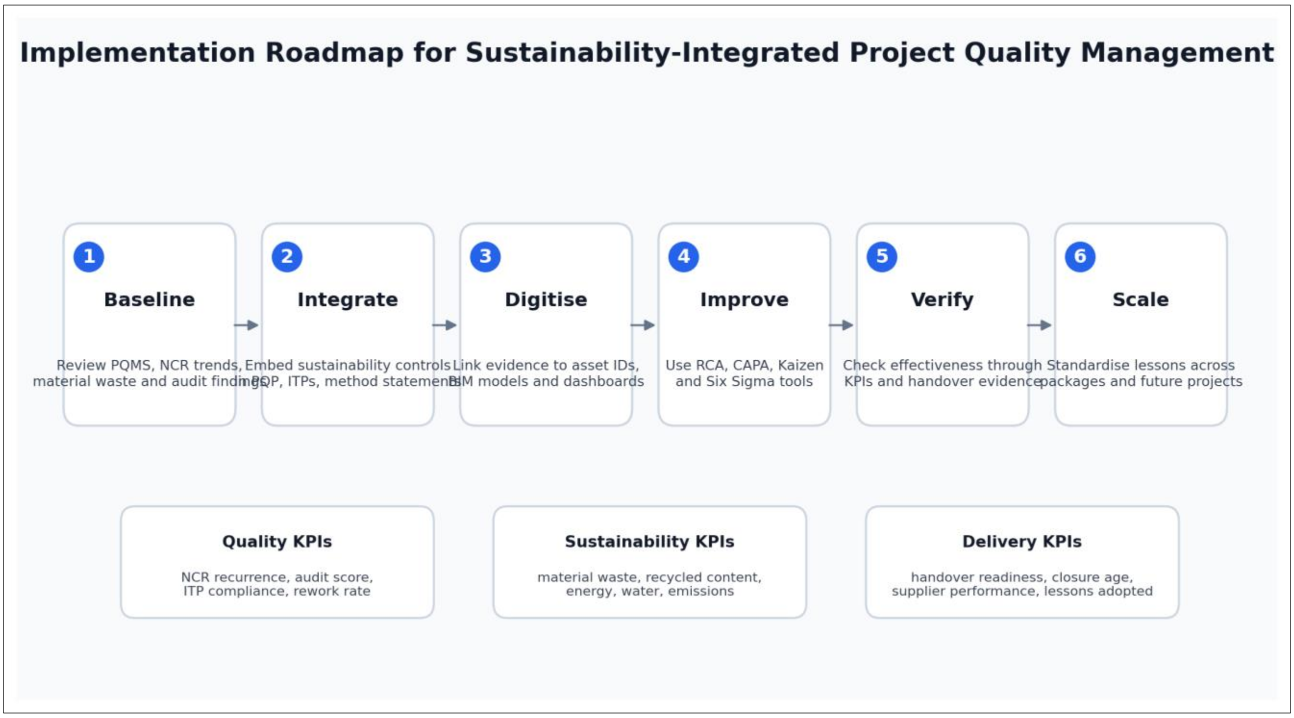

Figure 2: Implementation roadmap and KPI focus areas for sustainability-integrated PQMS

10. Performance Indicators for Integrated Quality and Sustainability

A sustainability-integrated PQMS requires indicators that show both process control and outcome value, consistent with sustainability assessment literature and integrated management approaches (Farahdel et al., 2024; Waqar et al., 2025). Quality indicators may include first-time inspection acceptance rate, NCR recurrence rate, NCR closure age, audit finding closure rate, ITP compliance, supplier defect rate, rework percentage and handover dossier completion. Sustainability indicators may include material waste caused by rework, rejected material quantity, recycled content verification, energy or fuel used for rework, water consumption in repeated activities, and percentage of suppliers meeting sustainability and quality criteria.

Indicators should be interpreted together rather than separately. A project with a low number of NCRs may not necessarily have strong quality if underreporting is occurring. A project with high sustainability reporting may still suffer quality-driven waste if rework is not measured. Integrated dashboards should therefore combine leading and lagging indicators. Leading indicators include inspection readiness, training completion, supplier audit status, method statement approval and closeout of preventive actions. Lagging indicators include rework cost, defect recurrence, rejected materials and delayed handover.

Table 2: Indicative KPIs for measuring integrated quality and sustainability performance

KPI category	Indicator	Measurement approach	Decision use
Quality performance	NCR recurrence rate	Recurring NCRs divided by total NCRs by package, discipline and contractor.	Identify process weaknesses and target preventive actions.
Quality performance	First-time inspection acceptance	Accepted inspections divided by total inspections submitted.	Measure readiness and workmanship consistency.
Sustainability performance	Rework-related material waste	Quantity or cost of materials consumed because of corrective work.	Link quality failures to waste reduction targets.
Supplier performance	Supplier conformance score	Weighted score based on audits, delivery defects, test failures and document compliance.	Prioritise supplier monitoring and procurement decisions.
Handover readiness	Complete asset evidence rate	Approved handover records divided by required records per asset or system.	Control closeout risk and support lifecycle asset management.
Continuous improvement	CAPA effectiveness verification	Percentage of CAPAs verified by evidence of reduced recurrence.	Ensure actions create improvement, not only closure.

11. DISCUSSION

The proposed model reframes quality management as a sustainability enabler. This is important for Saudi mega projects because quality and sustainability are often managed by separate teams. Quality teams may focus on specifications and inspection, while sustainability teams focus on environmental reporting and stakeholder commitments. The review suggests that the two functions should be integrated through shared processes and KPIs. Rework reduction is one of the clearest points of connection. When a PQMS prevents recurring defects, it directly reduces material use, emissions, waste and schedule disruption.

The model also emphasises the role of suppliers and subcontractors. Large infrastructure projects rely heavily on external organisations, and their performance strongly affects quality and sustainability outcomes. Supplier quality assurance should therefore include both compliance and sustainability-related controls. This may include verification of material certificates, source inspection, factory audits, packaging and storage controls, delivery traceability and supplier scorecards. A supplier that repeatedly causes NCRs should be treated as a sustainability risk because defects often lead to waste and replacement.

Another key insight is the importance of management review. Continuous improvement requires authority, resources and accountability. If quality data is not reviewed by project leadership, it may remain a technical record rather than a driver of change. Executive-level dashboards should show how NCR trends, rework, audit findings and handover readiness affect project sustainability and delivery performance. This can help shift behaviour from reactive closure to preventive governance.

The model has limitations. It is a conceptual review framework and should be validated through case studies, interviews or empirical data from Saudi mega projects. Future research could test the proposed KPIs in live projects, compare different procurement models or examine how digital quality platforms influence sustainability outcomes. Another research direction is the development of predictive models that estimate the sustainability impact of recurring NCRs. Such models could help project leaders prioritise quality interventions based on both technical severity and sustainability value.

12. CONCLUSION

Continuous improvement and sustainability integration are increasingly important for project quality management systems in Saudi mega infrastructure projects. As Vision 2030 programmes continue to deliver large-scale assets, quality governance must support compliance, traceability, resource efficiency, lifecycle value and stakeholder trust. This paper has shown that quality and sustainability are not separate objectives. They are connected through prevention of rework, reduction of NCR recurrence, responsible supplier management, effective handover and evidence-based management review.

The paper proposed a sustainability-integrated PQMS framework that combines strategic alignment, risk-based planning, digital evidence, performance review, CAPA, sustainability controls, stakeholder governance and continuous improvement. It also provided an implementation roadmap and KPI set for practical application. The framework is suitable for roads, airports, bridges, tunnels, utilities, mixed-use developments and other Saudi mega infrastructure environments. Its main contribution is to position PQMS as a strategic system for sustainable delivery rather than a compliance checklist. By embedding continuous improvement into quality governance, Saudi mega projects can reduce waste, improve asset reliability, strengthen delivery performance and support the long-term ambitions of Vision 2030.

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