

Leading Sustainability and Regeneration in Projects¹

Integrating Sustainability Pillars: A Holistic Approach to Project Management²

By Dr. Hugo Minney

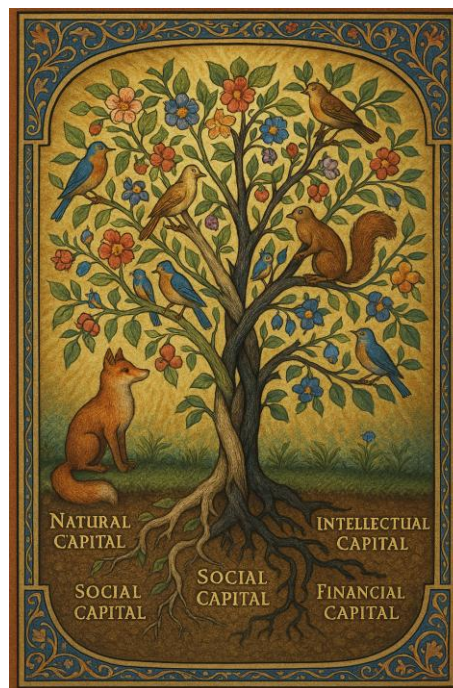


Figure 1 Soil of types of capital grows four entwined trees with many benefits

Abstract

Project managers are increasingly mandated to deliver sustainable and regenerative outcomes. This article (the second in a series with PM World Journal) lays the conceptual foundation for sustainability in project management by tracing the origins of the sustainability “pillars” model. It introduces three prevailing conceptual approaches—Marsh’s sectoral overlap, Pinchot’s pillars in balance, and Hayek/Friedman’s prioritisation of economic growth. The article uses systems thinking to explain interdependencies and introduces frameworks to identify and manage

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synergies and trade-offs. It defines and unpacks the evolution of the sustainability pillars framework, from the 1987 Brundtland Report to current practice. It explains why a four-pillar model (environmental, economic, social/community, and personal wellbeing) better reflects the complexity of contemporary projects, which are unique and temporary but leave behind lasting change. Using systems thinking, it shows how interventions in one pillar can affect others and how project managers can anticipate and align benefits across systems.

Keywords: *Sustainability, Regeneration, Project Management, Holistic Approach, Environmental Pillar, Economic Pillar, Community Pillar, Human Wellbeing, Systems Thinking, Multi-Capital Thinking, Regenerative Practice.*

Introduction

In our previous article, we explored the evolving mandate of the project manager in a world increasingly focused on sustainability and regeneration. We saw how project managers are pivotal in championing these outcomes, from initial scope definition to supply chain management. Now we delve deeper, providing an overarching framework that integrates sustainability and regeneration into the very fabric of project management. This piece advocates for a holistic approach, moving beyond a single-minded focus to embrace all four crucial pillars: environmental, economic (for the nation), community, and human wellbeing. Understanding their interdependencies, potential synergies, and how to manage trade-offs is essential for achieving truly regenerative project outcomes.

Moving beyond single-pillar focus to integrated sustainability and regeneration

Sustainability is often an afterthought in projects, focusing on a single aspect in order to tick a box, perhaps concentrating solely on reducing a project's carbon footprint or achieving a specific green building certification. While admirable, this narrow view often misses the intricate web of connections that define true sustainability and regeneration. A holistic perspective recognises that a project's environmental impact is inextricably linked to its economic viability, its effect on local communities, and the wellbeing of the individuals involved.

Ignoring any one of these pillars risks undermining the others, leading to unintended consequences and ultimately, sub-optimal outcomes.

We aim to show why an integrated view is not just beneficial, but essential for genuine project success and broader societal benefit. By consciously embedding sustainability across all dimensions, projects can deliver more resilient, impactful, and ethical results, moving beyond compliance to true value creation.

The pillars of sustainability and regeneration: A historical perspective and current models

The concept of sustainability, as we understand it today, has evolved significantly over time, encompassing various interpretations and frameworks. Its roots can be traced back to early conservation movements and ecological thought, which gradually broadened to include social and economic dimensions.

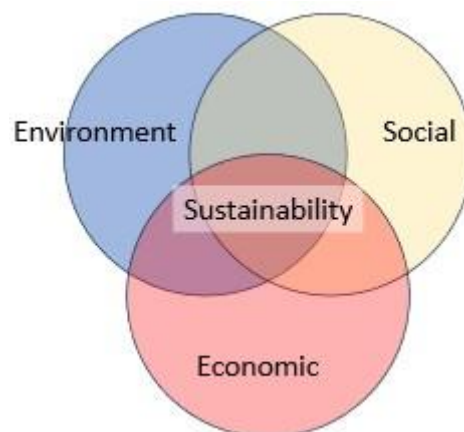
The definition we use today came from the Brundtland Commission's 1987 report, "Our Common Future," which defined sustainable development as

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [1].

This definition underscored the intergenerational equity aspect and became a cornerstone for subsequent discussions, prompting a global re-evaluation of development paradigms. This foundational report led to global initiatives like Agenda 21 at the 1992 Earth Summit and later culminated in the United Nations Sustainable Development Goals (SDGs) in 2015, providing a universal framework for holistic sustainability that covers environmental, social, and economic dimensions [2].

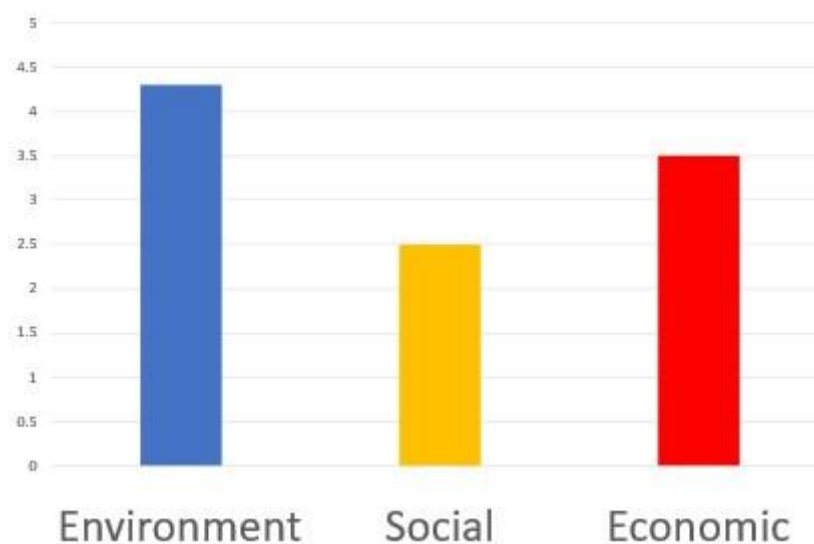
Historically, environmental thinking itself has been shaped by contrasting philosophies concerning humanity's relationship with nature. This contrast can broadly be seen in three perspectives:

- 1. Marsh's Three-Sector Venn Model (Nature's Intrinsic Value and Preservation):**
This view, championed by figures like George Perkins Marsh, whose 1864 work *Man and Nature* and 1878 revision *The Earth as Modified by Human Action* highlighted humanity's destructive impact on the environment, laid the groundwork for a perspective of nature as having intrinsic value and deserving of preservation [3, 4]. John Muir and the Sierra Club, alongside the establishment of "Our National Parks" and the subsequent National Park Service Act of 1916, further solidified this stance, recognising the need to preserve the sublime beauty of nature (e.g., Yosemite National Park), acknowledge ecosystem services, and respect native wisdom, arguing directly against unchecked industrial society and rapacious growth [5, 6]. This perspective aligns with reports from organisations like the IUCN, which see nature as good in itself, worthy of protection regardless of its direct utility to humans. This can be conceptualised as a Venn diagram where environmental, social, and economic sectors overlap, with sustainability residing in their intersection, but with a strong emphasis on the environmental core.



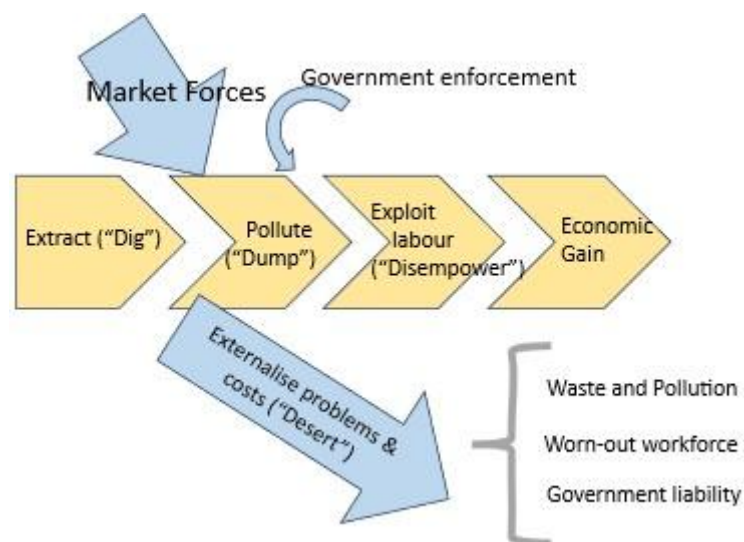
*Figure 2 Sustainability as the product of different interests
(George Perkins Marsh)*

2. **Pinchot's Equal but Separate Pillars (Conservation for Sustainable Resource Use):** A contrasting, yet still conservationist, approach was advocated by Gifford Pinchot, the first chief of the US Forest Service. Pinchot's philosophy focused on the sustainable use of natural resources. For him, conservation meant managing resources for "the greatest good of the greatest number for the longest time," implying that nature could and should be utilised, but in a way that ensured its continued availability [7]. This translated into practices like planting trees for harvest rather than preserving natural beauty, emphasising long-term productivity over outright preservation. In this model, environmental, social, and economic considerations are seen as distinct but equally important pillars that need to be balanced, as often seen in construction standards and certifications.



*Figure 3 Equal but separate pillars, each expected to reach a target level
(Gifford Pinchot)*

3. **Hayek/Friedman Model of Economic Growth as the Engine of Progress (Nature as Exploitable Resource and Market-Driven Innovation):** A more anthropocentric view, originally associated with economists from the Chicago School like Friedrich Hayek and Milton Friedman, considers natural resources primarily as exploitable assets for economic gain [8, 9]. From this viewpoint, often misquoting Adam Smith’s “invisible hand” concept out of its original context from *The Wealth of Nations*, the belief is that market forces and technical innovation will invariably come up with new solutions or substitutes by the time old resources are exhausted. This perspective can argue justification of the “pillaging” of natural resources with limited or no regard for long-term consequences (whether using up a resource or leaving pollution), assuming that technological progress will always provide remedies - or at least that the perpetrators can evade the effect. In this model, economic growth is prioritised as the primary engine of progress, with environmental and social concerns often seen as secondary or as externalities to be addressed by market mechanisms.



*Figure 4 Hayak/Friedman extractive model: economic gain
at cost of the other pillars*

The journey from early conservation to modern sustainability debates has navigated these differing philosophical underpinnings and conclusions can depend on someone’s starting point and what questions are asked [10, 11].

These historical and philosophical debates have given rise to various models attempting to encapsulate sustainability, each with its own nuances:

- **Triple Bottom Line:** Perhaps the most widely known model, popularised by John Elkington, proposes “People, Planet, Prosperity” (or “Profit”) as the three interdependent pillars. This framework encourages businesses to measure their performance not just financially, but also socially and environmentally [12].

- **The “5 Ps”:** Some extensions, particularly in the context of the United Nations Sustainable Development Goals (SDGs), expand the triple bottom line to include “Peace” and “Partnership,” making it “People, Planet, Prosperity, Peace, and Partnership” [13]. This broader scope recognises the foundational role of peace and collaboration in achieving sustainable development.
- **Overcoming the “4 Ds”:** An elegant counterpoint, sometimes referenced, frames sustainability as overcoming the “4 Ds”: “Dig” (extract non-renewable resources), “Dump” (pollute), “Disempower” (exploit labour resources and operate monopoly business practices unfairly), “Desert” (externalise liabilities and when it gets too bad, move on to somewhere else). This negative framing highlights the next letter in the alphabet, the “3 Es” (Environment, Economy, Equity), as the antidote.
- **The “5 Cs”:** Another model, particularly relevant in project management and corporate governance, expands to “Clean, Community, Culture, Care, and Corporate Governance” (Projectnord, n.d.). This framework emphasises ethical conduct and social responsibility as core to sustainable operations.
- **The “5 Rs” and “7 Rs” of Waste Management:** Focused on resource efficiency and waste reduction, the “5 Rs” (Refuse, Reduce, Reuse, Repurpose, Recycle) [14] and the expanded “7 Rs” (Rethink, Refuse, Reduce, Reuse, Repair, Regift, Recycle) provide a hierarchy for minimising environmental impact through responsible consumption and production.
- **Environmental, Social, and Governance (ESG):** Increasingly prevalent in investment and corporate reporting, ESG criteria provide a framework for assessing an organisation’s performance beyond traditional financial metrics, encompassing its environmental footprint, social impact, and governance structures [15].

While these models offer valuable frameworks, for the purpose of this article series, and due to the specific focus of project management in delivering tangible outcomes from temporary and unique undertakings, we find a four-pillar approach to be most practical and comprehensive, as championed by various organisations including Plastic Free Schools [16]. We differentiate between “community” and “human wellbeing” as separate pillars because they usually require distinct strategic focuses and interventions within a project context. Community impact typically refers to a project’s contribution to external societal structures and collective groups (e.g., local infrastructure, social cohesion), whereas human wellbeing encompasses the internal, individualistic aspects (e.g., mental health support for project team members, fair working conditions and workplace rights, gender and faith identity). This distinction allows for a more nuanced and targeted approach to integrating these crucial social dimensions into project planning and execution.

The four pillars of sustainability and regeneration in projects

To truly integrate sustainability, we must clearly define its multifaceted nature through these four interconnected pillars that form the bedrock of sustainable and regenerative project management:

Environmental (planet)

This pillar encompasses the project's direct and indirect impact on natural ecosystems, biodiversity, resource consumption, and pollution. It compels project managers to move beyond mere compliance with environmental regulations to actively seeking ways to restore, enhance, and minimise harm to natural systems throughout the project lifecycle [17]. For instance, a construction project might not only minimise waste and energy use but also incorporate green infrastructure, such as permeable paving and native landscaping, to improve local biodiversity, manage stormwater runoff, and reduce urban heat island effects [18]. The selection of low-impact materials, consideration of embodied carbon, and strategies for waste reduction and diversion from landfills are also central to this pillar [19] – although WRAP does not have a current construction toolkit.

Economic (prosperity for the region or nation)

While traditional project economics often focus narrowly on financial returns for the commissioning organisation, the sustainability lens expands this to national and regional economic growth and resilience. This pillar considers how a project contributes to the broader economy through mechanisms such as job creation, fostering local supply chain development, promoting innovation, and generating long-term prosperity, rather than merely facilitating short-term gains that might externalise costs onto society or future generations [20]. For example, a project might prioritise local procurement to recirculate wealth within the region or invest in skills development programmes that enhance the employability of the local workforce, thereby building regional economic capacity [21].

Community (people in communities)

Projects are rarely isolated entities; they operate within, and significantly impact, existing communities. This pillar addresses the crucial “social licence to operate,” ensuring equitable distribution of benefits, fostering meaningful community engagement, preserving cultural heritage, and strengthening the local social fabric [22]. A project manager might involve local residents in project planning through participatory workshops, ensure fair labour practices that benefit the community, or contribute to local infrastructure improvements (such as new public spaces or transport links) beyond its immediate scope, thereby building goodwill and shared value [23]. Ignoring community concerns can lead to delays, increased costs, and reputational damage.

Human wellbeing (people as individuals)

Often overlooked as a distinct pillar, the wellbeing of individuals – both within the project team and those affected by the project – should not be ignored. This pillar focuses on health, safety, mental wellbeing, work-life balance, fair wages, skill development, and fostering an inclusive and supportive environment [24]. It recognises that a thriving workforce and healthy individuals are fundamental to productive, ethical, and sustainable project delivery. This includes providing safe working conditions, addressing stress and burnout, promoting diversity and inclusion, and investing in continuous learning opportunities for team members [25].

These four pillars are not independent silos but rather deeply intertwined, influencing and often dictating the success, or failure, of each other.

Interdependencies between the pillars

The interconnectedness of these pillars is perhaps the most critical aspect of a holistic approach. Consider how environmental actions can profoundly impact the other pillars. A project that prioritises sustainable material sourcing (environmental), such as using locally sourced, recycled content, might simultaneously stimulate the local economy by supporting local eco-businesses (economic), create green jobs within the community (community), and improve the health of workers by reducing exposure to harmful chemicals found in conventional materials (human wellbeing). This synergy demonstrates both how a single action can yield multiple benefits, and that there are always consequences for every decision and the aim is that these consequences should be positive (i.e. benefits).

Conversely, a singular focus on one pillar without considering the others can lead to detrimental ripple effects. For instance, a project designed purely for immediate economic gain (e.g. rapid resource extraction without environmental safeguards) might lead to severe environmental degradation, displace or harm local communities, and compromise the long-term health of workers due to poor conditions – ultimately undermining its own supposed “success” by creating substantial externalised costs that society or future generations will bear [26]. Understanding these intricate interdependencies allows project managers to identify potential synergies where actions benefit multiple pillars simultaneously, and to proactively manage trade-offs where optimising one pillar might require careful consideration of its impact on others. This requires a sophisticated understanding of systems thinking, moving beyond linear cause-and-effect to appreciate complex feedback loops and dynamic interactions [27].

Systems thinking: Causal feedback, leverage points, and unintended consequences

Applying systems thinking is essential to navigate the complex interdependencies between the sustainability pillars. Projects operate within dynamic systems, where actions have far-reaching and often unforeseen consequences. Project managers must develop the ability to:

- **Identify Causal Feedback Loops:** Recognise how an action in one pillar can create a chain of reactions that feed back into the system, either reinforcing (positive feedback) or dampening (negative feedback) the initial effect. For example, investing in local skills development (human wellbeing) can lead to more local employment (economic), which strengthens community ties (community), and reduces the need for long-distance commuting (environmental benefit).
- **Locate Leverage Points:** Understand where small, targeted interventions can yield significant, systemic change. These are not always obvious and often require a deep understanding of the system’s dynamics. For instance, changing procurement policies to favour circular economy principles might be a powerful leverage point for reducing waste and stimulating new economic models across an entire industry [28, 29].

- **Anticipate Unintended Consequences:** Proactively consider potential negative side effects of project decisions that might impact other pillars. For example, a project focused solely on renewable energy deployment (environmental) might inadvertently displace local communities or harm biodiversity if not carefully planned. Systems thinking helps to identify these risks early and design mitigating strategies.

By adopting a systems thinking approach, project managers can move beyond simply managing individual tasks to understanding and influencing the broader system in which their projects reside, leading to more robust and truly regenerative outcomes [30].

Benefits mapping to manage interdependencies between pillars

To effectively manage the interdependencies and maximise positive outcomes across the four pillars, project managers can use benefits mapping. This technique visually links project outputs to the benefits they deliver, and crucially, how these benefits contribute to strategic objectives, including those related to sustainability and regeneration [31]. A benefits dependency network (BDN) can illustrate how achieving a benefit in one pillar can enable or enhance benefits in others, making explicit the synergies and trade-offs.

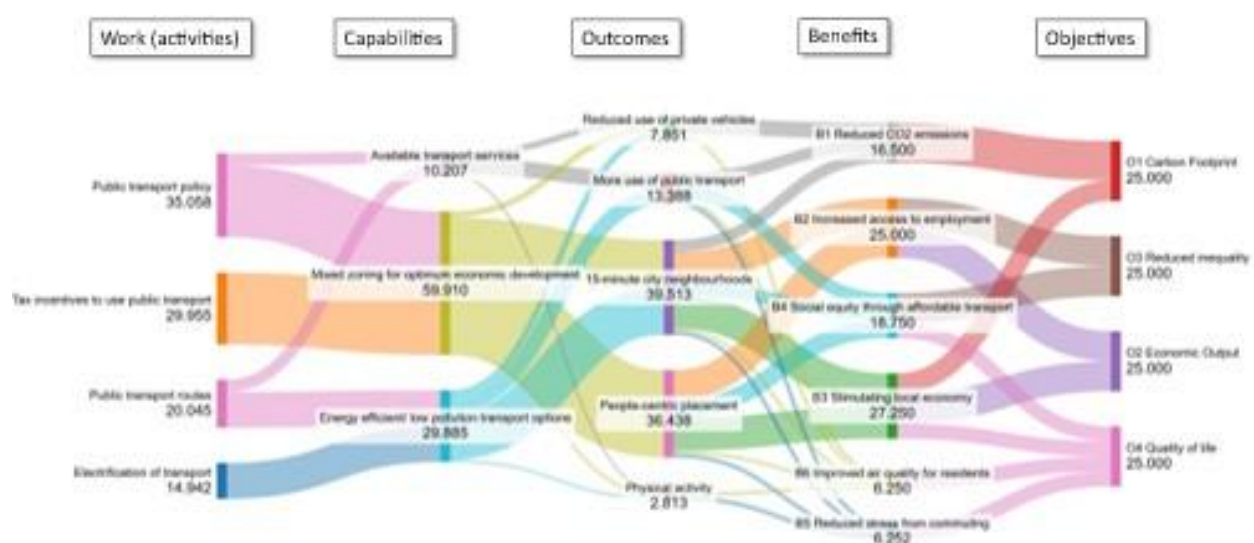


Figure 5 Benefits Dependency Network (in the form of a Sankey diagram) of a new public transport project example

This mapping helps project managers articulate the holistic value proposition of their projects and identify where interventions can create compounding positive effects across multiple projects.

The importance of including Global South and equity perspectives

A truly holistic approach to sustainability in project management must explicitly include perspectives from the Global South and prioritise equity. Many sustainability challenges disproportionately affect vulnerable populations and regions, often due to historical injustices and

unequal resource distribution. Ignoring these perspectives risks perpetuating existing inequalities and undermining the very goals of sustainable and regenerative development.

Project managers should consider:

- **Equitable Distribution of Benefits and Burdens:** Ensuring that the positive impacts of a project (e.g., jobs, infrastructure) are fairly distributed, and that negative impacts (e.g., pollution, displacement) are minimised for all communities, especially those historically marginalised.
- **Inclusive Stakeholder Engagement:** Actively seeking out and empowering voices from diverse communities, including indigenous groups, women, and low-income populations, whose traditional knowledge and lived experiences are invaluable for designing truly sustainable solutions.
- **Addressing Historical Injustice:** Recognising how past development models may have contributed to current environmental degradation or social inequities and designing projects that actively work to redress these imbalances (“regeneration” to a wider extent than simply environmental regeneration).
- **Context-Specific Solutions:** Understanding that sustainability solutions are not one-size-fits-all. What works in a developed nation may not be appropriate or equitable in a Global South context, therefore the project manager should design locally adapted, culturally sensitive approaches.

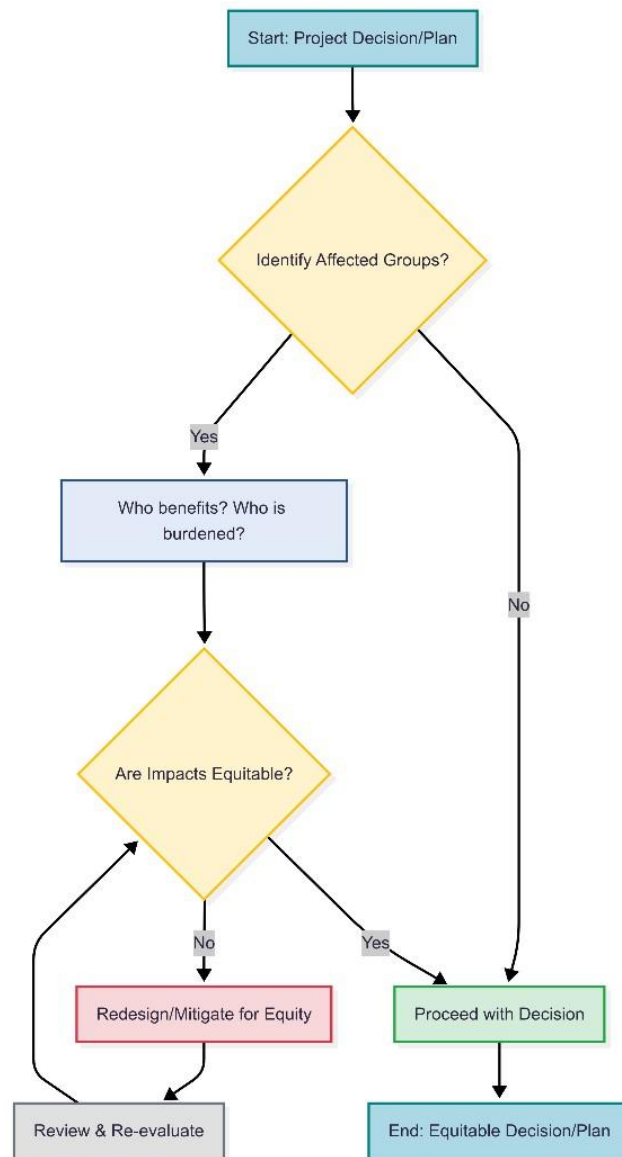


Figure 6 An example of the process of implementing an Equity Lens checklist

An “equity lens checklist” can be a valuable tool to systematically review project plans and decisions to ensure they promote fairness and address potential disparities in outcomes [32]. This proactive focus on equity is fundamental to achieving the “People” aspect of sustainability in its broadest sense.

Developing an integrated sustainability strategy for projects

Crafting a project strategy that genuinely integrates all four pillars requires a deliberate and systematic approach from conception to completion. Here are practical steps:

- **Early integration and defining success in context:** Sustainability goals must be embedded from the very outset, during project initiation and concept development. This

emphasis on early integration recognises that projects happen within a broader organisational or national context; the change they deliver is designed to help that entity be more successful. Therefore, understanding what “more successful” truly looks like for the organisation or nation—be it economic growth, enhanced quality of life, reduced inequality, or meaningful activity—is paramount. In the project world, this means understanding the overarching objectives and benefits of the portfolio of activity/organisation, against which each project’s individual contribution can be assessed. The composition of the portfolio can then be adjusted accordingly to maximise overall value [33]. This includes defining success metrics that extend beyond traditional financial returns to encompass clear environmental, social, and human wellbeing outcomes. For example, a project’s success might be measured not only by budget adherence but also by its contribution to local biodiversity net gain or improved community access to green spaces[34].

- **Comprehensive stakeholder mapping and engagement:** Identify all relevant stakeholders across all pillars—from environmental groups and local community leaders to employees, trade unions, and national economic bodies. Engage them early and continuously through transparent communication and participatory processes to understand their diverse needs, concerns, and aspirations. This proactive engagement builds trust and informs better decision-making[23].
- **Lifecycle thinking:** Assess the project’s impact across its entire lifecycle, from resource extraction and manufacturing of materials, through construction and operation, to decommissioning and disposal. This helps uncover hidden impacts and opportunities for improvement at every stage, promoting a circular economy approach[35].
- **Holistic risk and opportunity management:** Beyond conventional project risks, proactively identify environmental, social, and wellbeing risks, as well as opportunities for positive impact [36]. We must consider three responses to risk:
 1. **Mitigation:** Preventing the risk from happening or reducing its severity. For example, reducing CO2 emissions (or their equivalent) from project activities or actively extracting CO2 from the atmosphere through carbon capture technologies (such as trees and other planting – it’s often counterproductive to use an expensive solution) to combat climate crisis.
 2. **Adaptation:** Recognising that a risk is likely to happen and adjusting plans or designs accordingly. For example, preparing for a hotter climate, including the likelihood that some areas of the world will become uninhabitable, by designing climate-resilient infrastructure, developing drought-resistant agricultural practices, considering patterns of in-year migration.
 3. **Crisis Planning:** For huge but unlikely risks, preparing for the worst-case scenario. This could include preparing for mass migration of populations or potential “water wars” if climate change leads to severe resource scarcity, requiring robust contingency plans and international cooperation.

This might involve assessing climate change risks to the project’s infrastructure or supply chain resilience or identifying opportunities to create significant social value through local hiring initiatives, apprenticeships, or community asset development.

- **Performance targets and metrics:** Establish clear, measurable, and ambitious targets for each pillar and define how performance will be tracked and reported [31]. This moves sustainability from an abstract concept to concrete, actionable goals, ensuring accountability and enabling progress monitoring. Examples include tonnes of carbon avoided, percentage of local spend, number of community engagement hours, or improvements in employee satisfaction scores [37].
- **Contractual embedding and supply chain integration:** Incorporate explicit sustainability clauses into contracts with suppliers, contractors, and partners, ensuring that sustainable practices, ethical sourcing, and fair labour standards are mandated and monitored throughout the entire project supply chain. This extends the project's sustainability impact beyond its immediate boundaries [28]. A notable example of this was seen in the London 2012 Olympic Games [38], where rigorous sustainable supply chain requirements were integrated into all contracts, setting a precedent for major projects globally [39, 40].

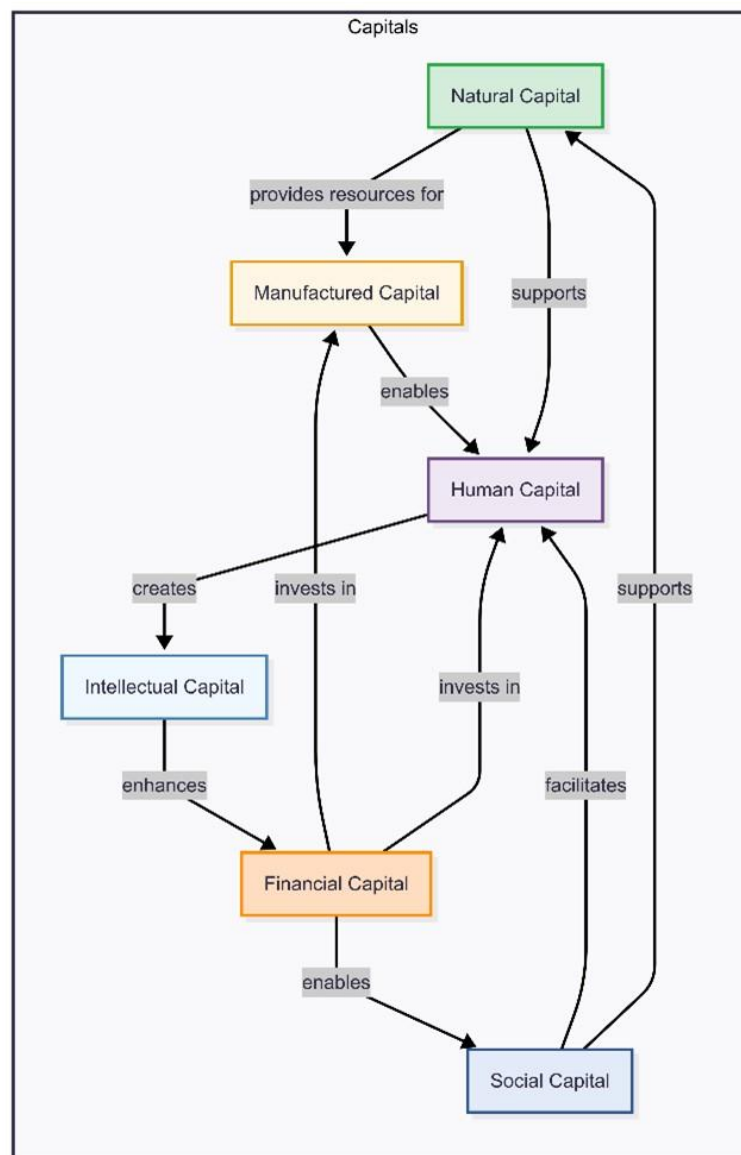
By following these steps, project managers can develop strategies that not only deliver the primary project objectives but also actively contribute to a more sustainable and regenerative future, creating enduring value for all stakeholders.

Multi-capital thinking in project management

To understand value creation in a holistic sense, project management is adopting “multi-capital thinking”. This concept, which expands upon traditional financial capital focus, helps decision-makers consider the broader asset base affected by projects and ensures a more comprehensive assessment of value created or consumed [41]. The key capitals include:

- **Natural Capital:** This refers to the stock of natural assets which provide ecosystem services crucial for life and economic activity (e.g., clean air, fresh water, fertile land, biodiversity, raw materials). Projects should aim to enhance, or at the very least minimise harm to, this capital. For example, a civil engineering project might incorporate sustainable drainage systems that recharge local aquifers and improve water quality, thereby enhancing natural capital.
- **Social Capital:** The networks of relationships among people and institutions within a society that enable it to function effectively. Projects can build social capital through genuine community engagement, fostering partnerships, promoting trust, and enhancing civic participation. For instance, a community development project might create shared public spaces that encourage social interaction and strengthen local networks.
- **Human Capital:** This encompasses the knowledge, skills, competencies, and attributes embodied in individuals that contribute to their ability to produce economic value and thrive. Projects can enhance human capital through training, skill development, promoting diversity and inclusion, and ensuring the health and wellbeing of project teams and affected communities. An infrastructure project, for example, could offer apprenticeships to local young people, increasing their employability and enhancing the region's human capital.

- **Manufactured Capital:** Material goods or infrastructure created by humans that are used in the production process (e.g., buildings, machinery, roads, technology). Sustainable project management aims to create durable, adaptable, and resource-efficient manufactured capital, perhaps by utilising modular design or materials with low embodied energy.
- **Intellectual Capital:** Non-physical assets such as patents, copyrights, software, organisational processes, knowledge, and brand reputation. Projects can contribute to intellectual capital by generating new knowledge, developing innovative sustainable solutions, or building an organisation's expertise in green project delivery.



*Figure 7 Multi-capital thinking – how the different capitals influence each other
(see also Figure 1)*

By applying this broader lens, project decision-making can move beyond simple cost-benefit analysis to consider the full spectrum of value created and consumed. For example, investing in a training programme for local community members (enhancing human capital) might initially seem like an added project cost. However, it builds social capital within the community, ensures a skilled local workforce for future phases or local businesses, and contributes to the long-term economic prosperity of the region – a far greater and more sustainable return than financial metrics would capture [31, 42, 43]. It can also overcome local resistance to a project and subsequent projects, saving the organisation considerable costs in the future.

Measuring and reporting on integrated sustainability performance

Moving beyond traditional financial reporting, assessing a project's holistic impact across all four pillars requires robust new frameworks and metrics. This is not just about compliance but about demonstrating genuine progress, accountability, and the long-term value created.

- **Integrated metrics and KPIs:** Develop key performance indicators (KPIs) that capture specific and measurable outcomes across all four pillars. For the environmental pillar, this might include tonnes of CO₂ equivalent avoided, litres of water saved, or hectares of habitat restored. Economic metrics could include local jobs created, local supply chain spend percentage, or new businesses supported. Community metrics might track stakeholder satisfaction scores, number of community engagement activities, or the extent of social value generated (e.g. in monetary terms using Social Return on Investment). Human wellbeing metrics could include employee retention rates, safety incident rates, or mental health support utilisation [36, 37].
 - **Measurement Challenges:** While significant progress has been made in measuring environmental impacts like carbon dioxide equivalent emissions (e.g., carbon neutral certifications) and biodiversity impact, and social value (e.g., impact on communities, jobs, apprenticeships, addressing inequality, as tracked by platforms like the Social Value Portal in the UK), other areas present greater challenges. Measuring human rights compliance and the full extent of supply chain impacts, for instance, can be complex due to data availability and transparency issues. While there are similarities between tracking Greenhouse Gas (GHG) Scopes 1 & 2 emissions and workplace relations, or GHG Scope 3 and broader social value/human rights, the direct measurement of human rights performance across a complex global supply chain remains a significant hurdle.
- **Lifecycle assessment (LCA):** Utilise comprehensive LCA tools to quantify the environmental impacts of a project from “cradle to grave” (or “cradle to cradle” in a regenerative context). This provides a holistic picture of its environmental footprint, from raw material extraction, through manufacturing, transport, construction, operation, and eventual disposal or reuse [44].
- **Social return on investment (SROI):** Employ SROI methodologies to monetise social and environmental outcomes that typically lack a market price, allowing for a more direct comparison with financial returns and demonstrating the broader value created for society [45]. While complex, SROI can powerfully illustrate the non-financial benefits of a project.

- **Transparent reporting:** Develop clear, accessible, and timely reports that communicate the project's sustainability performance to all relevant stakeholders, including successes, challenges, and lessons learned. This fosters trust, enhances transparency, and enables continuous improvement for future projects[46]. Such reports can feed into broader organisational sustainability reports and contribute to external disclosures.
- **Beyond compliance:** While compliance with existing regulations is a foundational baseline, truly integrated measurement aims to go beyond, seeking opportunities for innovation and leadership in sustainability performance [47]. Critically, proactive engagement with higher sustainability standards can mitigate future risks and costs. For example, if regulations change during a project's delivery, requiring work to stop, be undone, and then redone, the associated costs and delays can be substantial. By working to a higher standard from the outset, exceeding current compliance, the additional upfront investment might be more than repaid by avoiding the expense and disruption of mid-project changes necessitated by new legislation. This foresight ensures long-term project viability and value.

Case studies: Projects demonstrating integrated sustainability approaches

While specific, detailed case studies will be highlighted in subsequent articles focusing on particular sectors, it is valuable to illustrate the breadth of projects successfully navigating integrated sustainability. These examples illustrate how projects, regardless of their scale or sector, can achieve synergistic benefits by consciously addressing multiple pillars, navigating complexities, and often finding innovative solutions to seemingly competing priorities.

- **National Frameworks for Wellbeing Economies:** The **New Zealand Living Standards Framework** offers a comprehensive approach to national wellbeing, moving beyond traditional GDP to include social, environmental, and cultural capitals in policy and investment decisions[48]. This provides a macro-level example of integrated sustainability principles guiding government projects and priorities.
- **Regenerative Urban Developments:** The **Amsterdam City Doughnut Portrait** is a pioneering example of a city adopting Kate Raworth's Doughnut Economics framework to guide its urban development. This involves ensuring all residents can thrive within planetary boundaries, addressing social and environmental needs holistically in planning and projects [49, 50]. The Vauban quarter in Freiburg is another example of this [51].
- **Equitable Infrastructure Projects:** The TransMilenio, Bogotá, Colombia: whilst this now faces challenges with overcrowding, it provides high-quality public transport to low-income areas that previously lacked adequate service. It significantly improves connectivity, reduces travel time for millions, and fosters social inclusion by allowing residents from peripheral neighbourhoods to access jobs, education and healthcare in the city centre[52, 53].

These overarching examples demonstrate that successful integrated sustainability is not an accident but the result of intentional design and rigorous project management.

Overcoming challenges to integrated sustainability

Implementing an integrated sustainability approach is not without its hurdles. Project managers frequently encounter:

- **Competing priorities and trade-offs:** The tension between short-term financial pressures and long-term sustainability goals can be challenging. It requires strong leadership from project sponsors and a clear understanding of the holistic, long-term value proposition of sustainability, demonstrating how initial investments can yield greater benefits over time [54]. Effective project managers must act as advocates, translating sustainability benefits into the language of traditional business value.
- **Stakeholder conflicts and diverse interests:** Different stakeholder groups might have divergent interests, for example, balancing the needs of local residents for quiet and minimal disruption with the demands of investors for rapid project completion. Effective communication, negotiation, active listening, and co-creation strategies are vital to build consensus and manage these complexities [55].



Figure 8 Sustainability challenges range from internal to external

- **Data collection and management complexity:** Gathering accurate, consistent, and comprehensive data across all four pillars can be complex, particularly for large or geographically dispersed projects with multiple contractors. Leveraging technology (e.g., digital platforms, BIM for embodied carbon tracking, IoT sensors for environmental monitoring) and establishing clear data protocols, responsibilities, and validation processes are crucial [56]. When collecting data, it is important to adhere to the principle of **proportionality**, as outlined in British Standard BS 202002 (Benefits Management) and Social Value Principle 4 (“only include what is material”) [45, 57]. This means determining the value of reporting a particular dataset for informing decisions, and therefore the necessary resolution or number of significant digits required. For example,

to assess community acceptance of a solution, is a precise survey with 100 Likert scale responses needed, or is a show of hands at a community meeting sufficient? The chosen method should align with the decision to be made, balancing rigour with practicality.

- **Cultural resistance and organisational inertia:** Shifting established mindsets and practices within organisations can be difficult, especially when sustainability is perceived as an “add-on” or cost centre. This requires sustained education, targeted training programmes, visible leadership commitment, and demonstrating the tangible benefits of integrated sustainability through pilot projects and success stories [58].
- **Lack of standardised metrics and reporting:** While progress is being made, the absence of universally adopted, comparable metrics for certain social and human wellbeing outcomes can complicate measurement and benchmarking, making it harder to demonstrate progress and compare performance across projects [59]. However, significant work is ongoing to apply the **United Nations Sustainable Development Goals (SDGs)** and develop specific individual project metrics aligned with these global targets [60]. Furthermore, platforms like the **Social Value Portal**, referenced in our first article [38], provide a framework for consistently measuring and reporting social value, contributing to greater standardisation [61].

Overcoming these challenges requires vision, persistence, and a willingness to embrace new ways of thinking and working. It also demands that project managers become adept at influencing, collaborating, and communicating the value of a holistic approach to all involved, fostering a culture where sustainability is a core part of project DNA.

The future of project management: Towards regenerative practice

The journey towards truly integrated sustainability culminates in the concept of “regeneration.” This moves beyond simply “doing less harm”—the traditional focus of many sustainability initiatives—to actively “doing more good” [62]. Regenerative projects aim to restore, renew, and revitalise natural and social systems, leaving them in a better state than they were found.

For instance, a sustainable project might minimise its carbon footprint and reduce waste. In contrast, a regenerative one might actively sequester carbon in the soil through ecological restoration, enhance biodiversity beyond its original state, and leave the community stronger, more resilient, and more connected than before. This represents a profound shift in mindset, viewing projects not just as mechanisms to deliver a specific output, but as engines of positive change capable of healing and enhancing our planet and societies. It asks project managers to consider their legacy not just in terms of delivered assets, but in terms of restored ecosystems, strengthened communities, and flourishing human lives. This proactive and restorative approach embodies the true spirit of regeneration.

Intriguingly, project managers are discovering “little helpers” in the natural world that can significantly contribute to these regenerative outcomes, leveraging ecological processes instead of purely engineered solutions. For example:

- **Beavers:** Reintroducing beavers to dam streams and re-create wetlands can naturally manage water flow, reduce flooding, improve water quality, and create diverse habitats, often more effectively and cost-efficiently than human-engineered solutions. This becomes a natural project intervention for flood defence or biodiversity enhancement [63].
- **Soil Microbes:** Encouraging healthy soil microbial communities through regenerative agriculture practices can naturally sequester nitrogen and carbon, enhance soil fertility, and improve water retention, reducing the need for synthetic fertilisers and intensive machinery [64]. Project managers in land restoration or agricultural development can integrate these biological solutions.
- **Ocean Kelp Forests:** Planting fast-growing marine plants, such as ocean kelp, can absorb vast amounts of carbon dioxide from the atmosphere, creating underwater ecosystems that support marine life and offer potential for sustainable harvesting. This provides a natural alternative to large, energy-intensive artificial carbon capture machines [65].
- **Large Herbivores:** Reintroducing or managing populations of large herbivores (e.g., bison, wild cattle) can churn up the soil, disturb undergrowth, and create mosaic habitats, promoting biodiversity and ecosystem health through natural grazing patterns [66]. This approach integrates ecological processes into landscape-scale regenerative projects.
- **Apex Predators:** Balancing animal populations through the reintroduction of apex predators can restore ecological balance, control herbivore numbers, and indirectly promote vegetation growth and carbon sequestration [67]. For instance, the reintroduction of wolves in Yellowstone National Park demonstrated profound ecosystem-wide regenerative effects [68].

These natural solutions highlight a shift in project management towards collaboration with, rather than domination of, natural systems, unlocking powerful and sustainable regenerative outcomes.

Conclusion

Projects can be the engines of sustainable and regenerative change – if a holistic approach is taken. By consciously integrating the environmental, economic (for the nation), community, and human wellbeing pillars, project managers can elevate their work from mere delivery to true value creation. This integrated approach not only leads to more resilient, impactful, and ethical projects but also positions project management as a critical discipline for addressing the grand challenges of our time. We encourage all project professionals to embrace this view that looks beyond the immediate financial return, fostering projects that not only meet their objectives but also leave a lasting, positive legacy for future generations. The journey towards a regenerative future begins with individual projects, driven by visionary and competent project managers. We encourage project managers to do something that you can believe in.

This is the second article in a series, and one of the foundation articles. In later articles we explore the integration of sustainability into projects in specific sectors.

AI usage in researching and writing this paper – statement by the author

This article, "Integrating Sustainability Pillars: A Holistic Approach to Project Management," was prepared with the assistance of an Artificial Intelligence (AI) large language model (LLM). Under direction and control of the author, the AI LLM was used to facilitate the drafting, research, and refinement process of the article. For example, AI was guided to refine the language to ensure it aligned with British English conventions, maintained a professional yet accessible tone, and avoided common AI-generated phrasing. An AI tool was also used to assist in the generation of illustrations. The author maintained full control at all times and assumes full responsibility for the completed work.

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Minney has analysed the benefits of change, and weighed them up against the need for effective operations to keep the lights on, since 1990 when he started supplying high ticket computer systems and specialist software for workforce planning; he has built business cases of all types and is acutely aware of the pressures to make a single project a success at the expense of the organisation's objectives until he was a board director in National Health Service and could take a portfolio overview. Minney is now a project management consultant with a sideline chairing a charity restoring the sense of community for young people.

Minney works in project management, specialising in putting a number on difficult benefits (such as sustainability and regeneration), motivating team members by reporting what they are achieving together and changing the community and culture to want to achieve – together. At present, he's more involved on the governance side, accredited as a Social Value practitioner and Chartered Project Professional, and reviewing the balance of projects and contribution to objectives and benefits across portfolios.

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