The GPM P5™ Standard for Sustainability in Project Management

Release 1.5.1

P5

People, Planet, Prosperity, Processes and Products

GPM Driving Sustainable Business Change

In Support of the THE GLOBAL GOALS For Sustainable Development

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Published in the United States of America

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1. Introduction 7
1.1 Society and the environment are facing many challenges 7
1.2 So what has all of this got to do with project management? 8
1.3 The other Triple Constraint 8
1.4 The Global Goals 8
1.5 On Products 9
1.6 On Processes 11
1.7 The P5 Ontology 12
2. P5 and the Social Bottom Line 13
2.1 Labor Practices and Decent Work 13
2.1.1 Employment and Staffing 13
2.1.2 Labor/Management Relations 14
2.1.3 Project Health and Safety 14
2.1.4 Training and Education 15
2.1.5 Organizational Learning 15
2.1.6 Diversity and Equal Opportunity 16
2.1.7 Local Competence Development 16
2.2 Society and Customers 16
2.2.1 Community Support 17
2.2.2 Public Policy and Compliance 17
2.2.3 Customer Health and Safety 17
2.2.4 Product and Service Labelling 18
2.2.5 Market Communications and Advertising 18
2.2.6 Customer Privacy 18
2.3 Human Rights 19
2.3.1 Non-Discrimination 19
2.3.2 Exploitative Child Labor 19
2.3.3 Forced and Compulsory Labor 20
2.4 Ethical Behavior 20
2.4.1 Investment and Procurement Practices 20
2.4.2 Bribery and Corruption 21
2.4.3 Anti-Competitive Behavior 21
3. P5 and the Environmental Bottom Line 22
3.1 Transport 22

3.1.1 Local Procurement 22
3.1.2 Digital Communication 23
3.1.3 Traveling and Commuting 23
3.1.4 Logistics 23
3.2 Energy 24
3.2.1 Energy Consumption 24
3.2.2 CO2 Emissions 24
3.2.3 Clean Energy Return 24
3.2.4 Renewable Energy 25
3.3 Water 25
3.3.1 Water Quality 25
3.3.2 Water Consumption 26
3.3.3 Sanitary Water Displacement 26
3.4 Consumption 26
3.4.1 Recycling 26
3.4.2 Disposal 27
3.4.3 Contamination and Pollution 27
3.4.4 Waste 28
4. P5 and the Financial Bottom Line 29
4.1 Return on Investment (ROI) 30
4.1.1 Benefit Cost Ratio 30
4.1.2 Direct Financial Benefits 31
4.1.3 Internal Rate of Return 31
4.1.4 External Rate of Return 31
4.1.5 Net Present Value 31
4.2 Business Agility 31
4.2.1 Flexibility/Optionality in the Project 32
4.2.2 Increased Business Flexibility 32
4.3 Economic Prosperity and Stimulation 32
4.3.1 Local Economic impact 33
4.3.2 Indirect Benefits 33
5. The P5 Impact Analysis 34
5.1 Keys to Performing a P5 Impact Analysis 34
5.1.1 Methods to Performing a P5 Impact Analysis 34

5.1.2 P5 and the Sustainability Management Plan 35
Citations 38
Recommended Reading 39

FOREWORD

The global focus on sustainable development, climate change, ethical behavior, social responsibility, and transparent supply chains has increased in recent years. So too has the have demands for sustainable business practices.

As a supporter of the United Nations Global Compact, GPM views our role in fostering global citizenship, through advocacy for sustainable projects as our primary remit.

As the steward of innovation, with representation in every industry worldwide, project management as a discipline is uniquely suited to address the challenges that humanity is facing head on and since 2009, GPM has led the way in this effort.

Our initial release of the P5 standard was downloaded over 16,000 times has been utilized in almost every country in the world. This release aligns with the Sustainable Development Goals to provide greater focus on shared value for project managers to be able to address global challenges.

It is GPM's belief that our discipline can lead the way in placing sustainable development at the heart of project management, and placing projects at the heart of sustainable development.

We are hopeful that the enhancements in this release will provide still greater insight and guidance that will ultimately lead to more sustainable projects and a brighter future for us all.

Sincerely,

Dr. Joel B. Carboni
Founder, GPM Global

1. Introduction

1.1 Society and the environment are facing many challenges

In the developed world, we regularly hear on the news about the rising cost of petrol (gasoline) and electricity. We also hear about jobs being shipped 'offshore' and even about the use of child or slave lab or in developing countries to manufacture clothing. According to the ILO, 11% of the world's children are in situations that deprive them of their right to go to school without interference from work.

Many of these child laborers work within the fashion supply chain, making the textiles and garments to satisfy the demand of consumers in Europe, the US, and beyond.

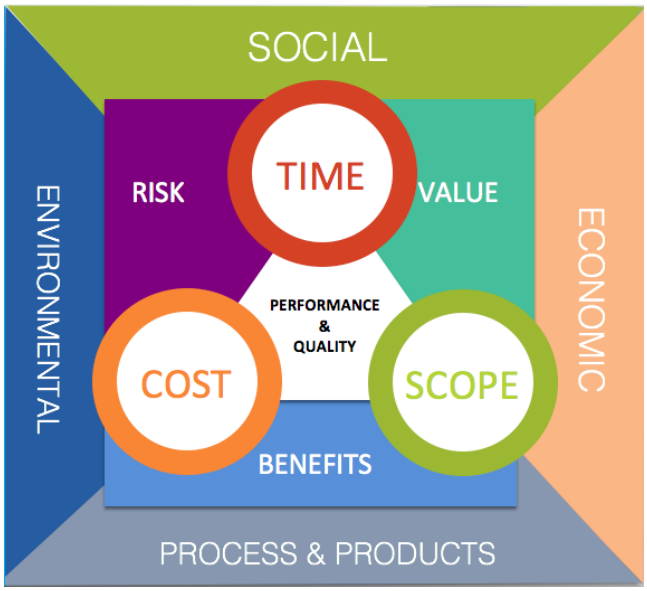
Then there are the issues of an aging population, the costs and demand for health care, and governments not generating sufficient tax revenue to pay for education, pensions, and other essential services.

The cost of housing has increased rapidly since 2000, putting home ownership out of reach for all but the top few percent of the population. Housing is mostly in the 'unaffordable' range, with home ownership often requiring over 85% of weekly wages to service a mortgage.

With the increase in the middle class in Asia, and through continued investment in infrastructure and education, the Asian Century is upon us. Many developing countries with a significantly lower employment cost are putting further pressure on developed economies and with the developed world's insatiable appetite for cheaper consumer goods, many industries are suffering structural adjustments or severe disruption.

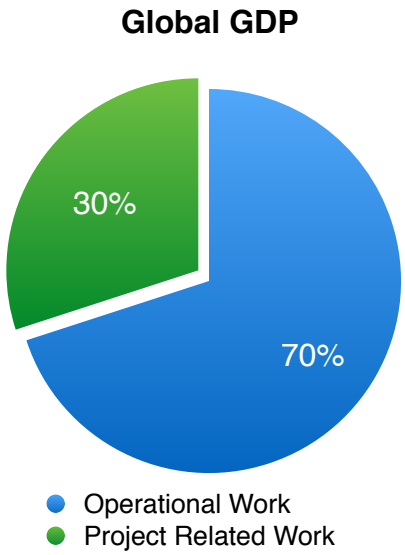
Then there are the environmental impacts. In August of 2016 yet another oil spill occurred in the Gulf of Mexico. The Great Barrier Reef in Australia has also suffered significant bleaching due to higher than normal ocean temperatures and ocean acidity. A report was released recently showing that 100% of the northern half of the reef is been completed bleached due to higher than normal ocean temperatures.

We are also living in a manner that consumes more resources that the planet can supply. As of 2016, we are consuming 1.6 planets worth of resources, and based on current trends, this will increase to two planets. Put another way, by August, we will be using 'next year's' allocation of resources. In effect, we are stealing resources from future years to pay for each year's excesses.



1.2 So what has all of this got to do with project management?

It is clear to see that the world is changing, and as a result, the discipline of project management can't remain the same.



Research indicates growth in project-based activities. In his recent book, *The Focused Organization* (2012), Antonio Nieto-Rodriguez identified the increasing shift from an operations focus to a projects focus over the last 100 years. Research has shown that as of 2014, approximately 30% of the world's GDP is spent on projects. Some forecasts show 40% by 2020.

These statistics require us to revisit the very essence of project management and to retest the underlying assumptions of how we plan and deliver projects.

Dr. Martin Barnes first introduced us to the "Iron Triangle" (also called the "Triple Constraint"), a concept has been one of the core concepts of modern project management ever since. Never a day goes by when a project manager fails to talk about delivering "on time, to budget, and to scope." But is this trinity the ***only*** measure of concern?

Since the advent of methodologies such as Projects in a Controlled Environment (PRINCE2) and Managing Successful Programs (MSP), there has been an increased focus on the delivery of benefits as a priority over the schedule or budget of the project.

Risk and Value are now mainstream conversations in the project management world, but is this enough? Are we still missing something?

1.3 The other Triple Constraint

For a number of years "professionalization" has been a key area of interest for those operating in the project management domain. There has been an increasing desire for project management to be recognized as a profession, to have an increased status and for project managers to be 'on par' with other professionals such as engineers, architects or accountants. But with professionalization comes responsibility and the expectations to act ethically and for betterment of society.

GPM's position is that for project managers to be considered professional, we must embrace sustainability. Our P5 Standard, as shown here combined with the Iron Triangle harmonizes the social, environmental, and economical considerations that are external to the project as well as the approach (process) and asset lifecycle (products) as the missing links.

Figure 1. Iron Triangle with the P5 Standard Integrated

1.4 The Global Goals

The initial release of the P5 Standard mapped to the UN Global Compact Ten Principles and GRI G4 Reporting Framework which it still does. In this release we have aligned it to the 2030 Agenda for Sustainable Development. Throughout the standard there are callout boxes that indicate examples of how the P5 elements tie to specific SDGs.

With 17 Goals and 169 targets there are many connections and combinations that are possible in any given project. In this standard, we have outlined several. For the complete mapping, visit www.greenprojectmanagement.org/p5 For more on the SDGs, visit https://sustainabledevelopment.un.org/sdgs

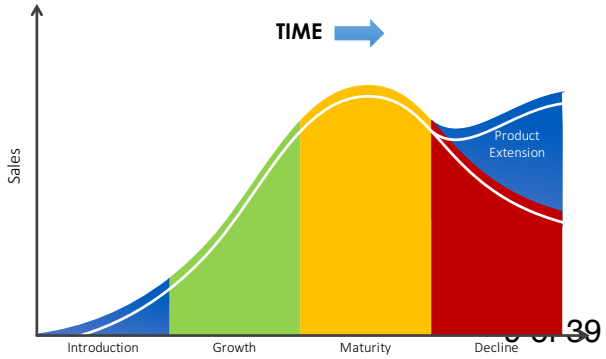
1.5 On Products

A ***product*** is any tangible or intangible service, goods, change, resource, business result, or outcome undertaken by an organization, using project management processes to create, update, expand, maintain and eventually dispose of the products, with the objective of using the product to provide future benefit to the organization.

There is no set time period for a product or asset life cycle as the length of each phase of its existence varies depending on economic life. A project's life cycle may not be the same duration as its timeline as success may only be achieved at times such as "benefits realization". Therefore, its timeline may include a separate project for the period after a traditional contract project, which is the period of time between the traditional project period and the benefit being realized to the organization. One product's entire life cycle could be completed within a few months while another product's could last for years.

Products commonly follow four stages:

Introduction – A product is introduced to the market.
Growth – The product starts to grow in the market.
Maturity – The product is established and sales increase and eventually stabilize.
Decline – The stage at which the product begins to



decline or the market for the product is no longer there.

P5 considers the product's life cycle from a social, environmental, and economic perspective. During each project phase sustainability should be accounted for to ensure the product's project from the time the idea for the product is conceived until it is handed off in its final form. This includes planning product realization, designing and developing, (that should consider quantity and types of materials, chemicals used, energy efficiency and recyclability) production and servicing.

Figure 2. The Product Lifecycle

The lifespan of the product that is measured covers the life of a single product from a planned obsolescence perspective, also known as its economic life which is what will be required to keep the product operating as intended from a servicing standpoint or to realize the real benefit that the project will deliver to the organization.

Example 1: A School Building

The physical building is the result of a project, and in subsequent years, there may be other projects to update, remodel, or expand. Eventually, the building will reach the end of its economic life, and a decision has to be made what will be done with the building, be disposed of and a new structure built or whether it is to be renovated and its economic life extended.

Example 2: A Cell Phone

As technology evolves, each cell phone that comes to market has new features. To get the new cell phones into consumers' hands, many projects must be undertaken.

From a high-level perspective, the project to develop a new phone, or tablet for that matter, follows Moore's Law (Moore, 1998) and is designed with an economic life span of roughly two years. Cell phones are costly to consumers and are filling up landfills all over the world. The Apple iPhone 7, for example, contains bromine, chlorine, lead, and mercury in the final product. Apple is not alone in this regard.

Most phones are reintroduced to the environment when disposed of as e-waste, which comprises 2% of the makeup of landfills in the United States alone. (EPA FAQs on, 2012)

Each product has social, economic and environmental impacts which may be recognized by a series of related projects during its product life cycle. Projects can include physical design, software design, marketing, testing, packaging, etc.

There are many ways to measure how sustainable the supply chain is. However, using P5, a true cradle-to-grave measurement can be taken as P5 can be used to measure and score the project that brought it into existence.

1.6 On Processes

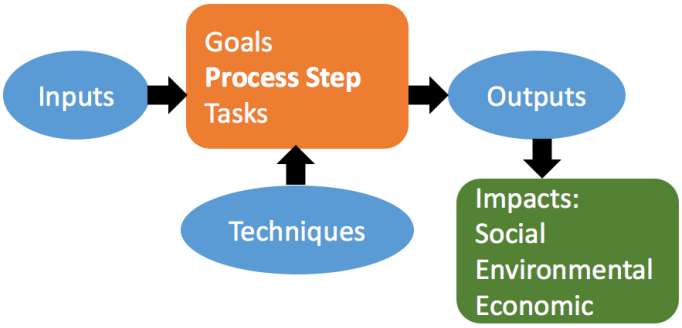


Figure 3. Process Flows

According to ISO 21500, Guidance on Project Management (ISO 21500:2012) a project consists of a unique set of processes consisting of coordinated and controlled activities with start and end dates, performed to achieve project objectives. Achievement of the project objectives requires the provision of deliverables conforming to specific requirements. A project may be subject to multiple constraints. Every project has a definite start and end and is usually divided into phases.

Although many projects may be similar, each project is unique. Project differences may occur in the following:

- Deliverables provided
- Stakeholders' influence
- Resources used
- Constraints
- The way processes are tailored to provide the deliverables
- The context or specific application (a construction project is very different from an IT project)
- The perspective of the stakeholders (especially the difference between the contractor, for whom the project is a profit center, and the owner, for whom the project is only the means to an end).

P5 measures project objectives and deliverables, their intended life spans, servicing, and project process for maturity and efficiency perspective against elements based on the triple bottom line.

According to ISO 21500: 2012, a process is a set of interrelated activities. Processes used in projects are generally categorized into three major types:

- **Project management processes**, which are specific to project management and determine how the activities selected for the project are managed.

- **Delivery processes**, which are not unique to project management, which result in the specification and provision of a particular product, service, or result, and which vary depending on the particular project deliverable.

- **Support processes**, which are not unique to project management, and which provide relevant and valuable support to product and project management processes in such disciplines as logistics, finance, accounting, and safety.

P5 views the maturity of these processes and the efficiency in which they are applied to determine the overall level of sustainability from a process perspective.

Project management processes can be grouped into process groups as described in ISO 21500:2012. These process groups are initiating, planning, implementing, controlling, and closing.

Activities within these process groups can be carried out in many ways. The GPM PRiSM method groups them into four phases, with a sequential method, to bring the project from initiate to close while taking into account the sustainability elements to ensure the best outcome from both a project success criteria and the impact of the delivery from a social, environmental and economic standpoint.

Not all project methods focus on sustainability factors; therefore from a P5 perspective they would be viewed as immature regardless of whether they are adequate ways to achieve the common level of success for a project, and achieve the result from a cost, time and scope perspective.

1.7 The P5 Ontology

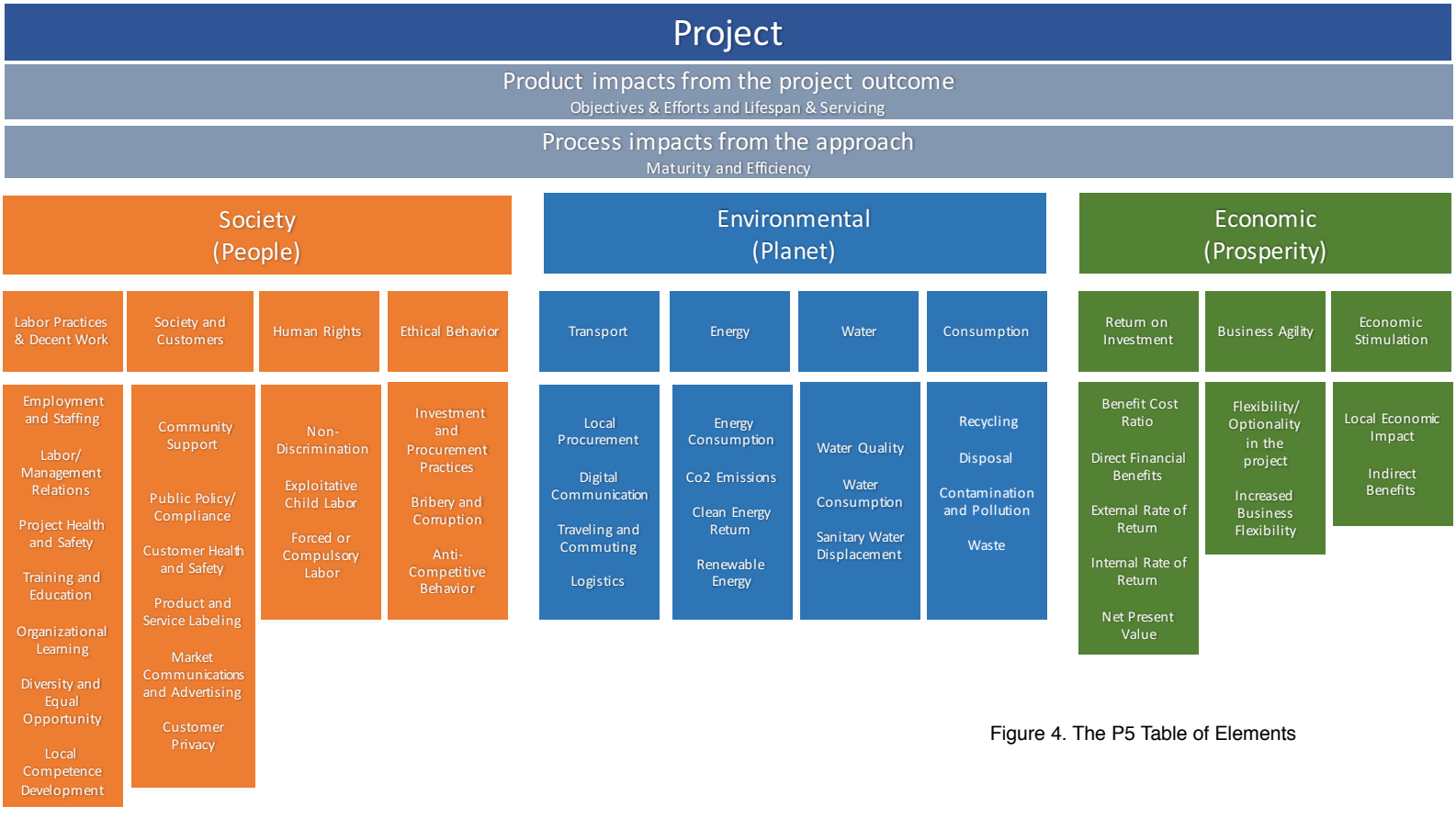


Figure 4. The P5 Table of Elements

P5 stands for People, Planet, Prosperity, Process and Products.

The P5 Standard is a tool that supports the alignment of Portfolios, Programs, and Projects with organizational strategy for Sustainability and focuses on the Impacts of Project Processes and Deliverables on the Environment, Society, the corporate bottom line, and the local economy.

The P5 Ontology, a theory of the existence of a structured set of essential components of an environment for which explicit expression is necessary for designing, operating, and changing the environment. P5 is not a methodology for how to create the environment, however it provides the principles or foundation for a methodology such GPM's PRiSM. The P5 Standard represents a structure, as it defines something. Whereas a methodology is a process that transforms something.

The simplest way to explain P5 is that it is made of bonds between the triple bottom line approach, project processes and the resulting products or services.

The standard expands on the triple bottom line theory to allow for project management integration and is an adaptation of a sustainability checklist that was developed at the 2010 IPMA® Expert Seminar, "Survival and Sustainability as challenges to projects."

This standard provides guidance on what to measure and how to integrate P5 into project activities and can also be used by sustainability professionals to support their reporting to include projects.

2. P5 and the Social Bottom Line

The social domain of sustainability concerns the impacts that portfolio, program and a have on people, society and communities. The focus of the social domain is on operating ethically and maintaining mutually beneficial relationships with employees, customers and the community.

P5 is based on internationally recognized standards, including:
- United Nations Universal Declaration of Human Rights
- United Nations Convention: International Covenant on Civil and Political Rights
- United Nations Convention: International Covenant on Economic, Social, and Cultural Rights
- Convention on the Elimination of all Forms of Discrimination against Women (CEDAW)
- ILO Declaration on Fundamental Principles and Rights at Work 105
- Vienna Declaration and Program of Action.
- The 2030 Agenda for Sustainable Development

The social domain contains a number of sustainability elements, which are categorized as:
- Labor practices and decent work, Society and customers, Human rights , and Ethical behavior

2.1 Labor Practices and Decent Work

This subcategory covers project governance policies as they pertain to labor practices, the relationship to policy set forth in organizational standards and operations, organizational hiring and staffing procedures, treatment of employees, project resources, and their well-being.

2.1.1 Employment and Staffing

The employment and staffing practices for the individuals who will comprise the project organization, ranging from the project steering committee (or board) to the project team.

It is recommended that the following be considered by project management:

- Engaging staff using appropriate employment types (full time or contract as well as volunteer)
- Paying livable wages
- Use of appropriate employment conditions including provisions for:
  - Healthcare
  - Holiday and parental leave
  - Fair dismissal
  - Allowing the project team to maintain a work-life balance

Employment and Staffing achieves a number of sustainable project outcomes including:

- Providing model employment standards for the organization or industry.

Supports SDG 8, "By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value."

2.1.2 Labor/Management Relations

Social Indicators

An organization's approach as it relates to the project owner/sponsor/stakeholders with regards to interfering with each other's legitimate and human rights, including: implementing policies for addressing issues, risks and individual performance; and procedures for mediation where disputes arise.

It is recommended that the project manager and project sponsor function in a partnership capacity to facilitate these matters as well as the acceptance, adoption, and integration of the project outcome(s) into an operating or 'business as usual' state.

Improved Labor/Management Relations achieves a number of sustainable project outcomes including:
Being known as an 'employer of choice'
Improved ability to attract the best staff both for projects and in operations

- Engaged and motivated workforce that are committed to personal and organizational success

2.1.3 Project Health and Safety

An organization's approach and procedures for health, safety and emergency management as they relate to the project, project team the project environment during the project life cycle.

It is recommended that project manager take into consideration:

- Identify and implement the requirements of of health and safety legislation and regulations
- Reduce or eliminate health and safety hazards through the design of safe working practices, staff training, use of protective equipment and through engineering
- Minimize the impact to health, safety, and the environment that the product will inhabit when it is put into operations or 'business as usual' state

Adherence to project health and safety standards achieves a number of sustainable project outcomes including:

- Provides a safe, secure and healthy workplace for the project team, which in turn results in engaged and committed staff
- Elimination of lost time and costs associated with workplace illness and injuries
- Avoidance of fines and penalties from breaches of health and safety legislation and regulations

Supports SDG 3, Target 9c "Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks."

2.1.4 Training and Education

An organization's approach to ongoing skills development and learning that supports the ability of project personnel to carry out project activities, maximizing value to the project and positive contributions to their careers.

It is recommended that project manager take into consideration:

- Identify skills required and any skills gaps and development needs of project team members
- Support and encourage team members to undertake training and development activities
- Coach and mentor the project team to build skills and capabilities

Training and Education achieves a number of sustainable project outcomes including:

A more efficient and effective workforce

- Being known as an 'employer of choice'
- Engaged and motivated workforce that are committed to personal and organizational success

Supports SDG 4, Target 3. "By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university."

2.1.5 Organizational Learning

An organization's approach to knowledge management that enhances its collective ability to accept and make use of new knowledge to benefit the organization's advancement and mitigate risk.

It is recommended that project manager take into consideration:

- The capture and analysis of lessons learned and the communication of these lessons throughout the organization.
- Incorporate recommendations from past projects

- Using progressive elaboration, proofs of concept and ‘test beds’ to engage with stakeholders and promote organizational learning
- Establishing communities of practice to share learnings across the organization and the broader community or industry

Organizational Learning adherence achieves a number of sustainable project outcomes including:
Enhanced capabilities across functions
Increased maturity from project to project
- Creating opportunities for creating industry standards and engaging with like minded organizations in benchmarking activities

2.1.6 Diversity and Equal Opportunity

An organization’s policies and practices regarding non-discrimination of project personnel and resources, It is recommended that the following be considered by project management:
- Equal opportunity for based for work on skill.
- Zero tolerance for bias based on age group, gender, minority group, and other indicators of diversity
- Seeking input from and leveraging the diverse range of skills and experience in solving problems

Promoting diversity and equal opportunity achieves a number of sustainable project outcomes including:
Being known as an employer of choice due to engagement of a diverse range of employees and project team members
- Exposure to a broad range of ideas and concepts as well as innovative solutions to problems due to the diverse background of project team members

2.1.7 Local Competence Development

Local Skills Development is often required as a result from projects that require professional availabilities that do not exist in the location where the project is taking place. Local communities can quite often be significantly impacted when the labor demographics must change due to a large project is established outside the region and workers relocate to where the project is located.

It is recommended that project management:
- Take into account the abilities of local and indigenous people for project resource planning
- Use local labour in their project team to minimize brain drain
- Incorporate local employment targets in supplier contracts

Focusing on Local Competence Development achieves a number of sustainable project outcomes including:
Up-skilling locals to provide ongoing support and maintenance
- Growing the local economy through the establishment of new industries
- Skills transfer to the local economy or community that has occurred through partnering professional immigrants with local workers

2.2 Society and Customers

This subcategory covers the impacts of a portfolio, program or project on the society in which the project's engagement and product will impact the end users or customers that will make use of it impacted by either the project or product.

2.2.1 Community Support

The degree of acceptance and support provided by the community at large that the project will have a direct impact on.

It is recommended that the project manager and sponsor, as a team, facilitate community support as interests will represent various stakeholder groups that require the focus of both individuals. It is also recommended that community support be central to project acceptance if the community is a key external stakeholder group.

Community support adherence achieves a number of sustainable project outcomes including:
Demonstrating that the project and the organization are concerned about the community in which the project is being delivered
- Acceptance of the result of the project which can lead to improved benefits realization
- Development of an improved relationship between the organization and the community

2.2.2 Public Policy and Compliance

The policies and procedures that are put in place to ensure that projects are complying with relevant laws and regulations.

It is recommended that project manager take into consideration:
- The laws and customs of the land in which the project is taking place
- Establish mechanisms to ensure ongoing compliance
- Develop communications and reporting for relevant stakeholders on compliance related matters.

Public Policy and Compliance adherence achieves a number of sustainable project outcomes including:
Improves transparency and accountability
- Strengthens brand protection and improves risk mitigation

Supports SDG 16, Target 5. "Substantially reduce corruption and bribery in all their forms."

2.2.3 Customer Health and Safety

The measures taken to ensure that a customer / consumer is not injured by the project and or project outcome(s). Project management must be socially and environmentally responsible.

It is recommended that project manager take into consideration:
- The impact on the health and well-being of potential uses of project product

- Published health and safety regulations and product safety standards
- Suitably label products and provide consumer information on their safe use

Customer Health and Safety adherence achieves a number of sustainable project outcomes including:
Builds credibility with consumers and investors
- Establishes transparency for the project

2.2.4 Product and Service Labelling

The labeling of the project's product and service information to ensure accuracy of content, safe use, disposal and any factors that may have environmental or social impacts.

It is recommended that project managers ensure that policies are in place to hold suppliers to the same level of product and services labeling standards and are aware of sustainable procurement standards such as ISO:20400 Sustainable Procurement Guidance

Product and Services Labeling adherence achieves a number of sustainable project outcomes including:
Improved reputation through full disclosure of product contents and the source of ingredients or components
- Provides transparency for the end user/ consumer about the broader lifecycle impacts of a product.
- Provides the environmental and social (critical) information for values-based purchasing decisions

2.2.5 Market Communications and Advertising

The reporting of incidents pertaining to regulatory compliance, human rights, environmental impacts, laws or public policies. The project sponsor, project manager, and and project team should at all times act in an ethical manner and report issues that fall within the realm of human rights violations, regulatory non-compliance, and illegal activities (from the purview of global norms, perception, and expectations).

Market and Communication and Advertising adherence achieves a number of sustainable project outcomes including:
Fosters customer loyalty
Reduces risk to brand
- Creates market differentiation / Supports new market penetration

2.2.6 Customer Privacy

The organizational policies and procedures that pertain to the handling of customer information, complaints, regulatory issues or loss of customer information. Project management should ensure that systems and safeguards are in place to ensure customer privacy during the project lifecycle.

Customer Privacy adherence achieves a number of sustainable project outcomes including:
Protecting the business reputation
- Prevents disruption of business continuity or temporary shutdown
- Mitigates scams and potential for fraud

2.3 Human Rights

This sub-category covers project processes and product impacts as they pertain to human rights. Among the human rights issues included are non-discrimination, gender equality, freedom of association, collective bargaining, child labor and forced or compulsory labor.

2.3.1 Non-Discrimination

Policies for non-discrimination due of race, color, national or ethnic origin, age, religion, disability, sex, sexual orientation, gender identity and expression, veteran status, pregnancy status or any other characteristic protected under applicable law.

It is recommended that project managers ensure that policies are in place to hold suppliers to the same level of non-discrimination standards.

It is recommended that project manager take into consideration:
- Decisions that impact the project team should be made without bias
- Assigning project work should be based on skill and ability
- Compensation should should be equally paid based on skill and ability

Non-Discrimination adherence achieves a number of sustainable project outcomes including:
Reduces unnecessary costs by reducing absenteeism, increasing productivity, and fostering a more motivated, and committed team.

Supports SDG 5, Target 1. "End all forms of discrimination against all women and girls everywhere."

2.3.2 Exploitative Child Labor

Work for which the child is either too young – work done below the required minimum age – or work which, because of its detrimental nature or conditions, is altogether considered unacceptable for children and is prohibited. Or, work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.

Project managers shall ensure that their projects and the project output's supply chain does not engage in child lab or and children shall not:
- be put into situations that might be harmful to their health or general well being,
- Be asked to perform tasks that are physically arduous, or
- have their rights (including the right to an education) compromised.

Policies and measures should be available that safeguard against forced child labor and young workers' being exposed to hazardous work either directly or through supplier channels.

Project managers should be aware of child labor laws and ensure that project work is demonstrably and transparently carried out by individuals who are of an age throughout the supply chain.

Supports SDG 16, Target 2. "End abuse, exploitation, trafficking and all forms of violence against and torture of children."

2.3.3 Forced and Compulsory Labor

Policies and measures that safeguard against forced or compulsory labor practices. It is considered a fundamental human right and is a provision of the UN 'Universal Declaration of Human Rights' and subject to ILO Conventions Forced Labour Convention and Abolition of Forced Labour Convention.

Project managers shall:

- Report significant incidents of forced or compulsory labor either in terms of:
  - Type of work, individual, organization, and location.

Not to be subjected to forced or compulsory labor is a fundamental human right.

Supports SDG 8, Target 7. "Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms."

2.4 Ethical Behavior

This subcategory covers project process and product impacts as they pertain to ethical behavior and focuses on three areas: Investment and Procurement, Bribery and Corruption and Anti-Competition.

Each element in this sub-category extends beyond a behavioral competence to organizational culture in how conscious leadership and higher purpose are cornerstones to successful projects and ultimately stronger business.

2.4.1 Investment and Procurement Practices

The practices of selecting which project to invest in and the procurement practices that will supply the project with resources. It is recommended that project manager take into consideration sustainability Principles agreed with the project sponsor covering the sustainability parameters that will guide selection and prioritization of selection and investment of projects.

Investment and Procurement Practices adherence achieves a number of sustainable project outcomes including:
- Brand protection through risk mitigation as the sustainability of the project, (socially, environmentally, and fiscally, are in check.
- Total asset lifecycle approaches with continuous improvement models are in place.
- Transparency through integrated reporting mechanisms connect project reports to organizational sustainability reports.

2.4.2 Bribery and Corruption

Policies, practices, and transparent communications with regards to forms of corruption, including extortion and bribery. It is recommended that Project sponsors and project managers partner to address bribery and corruption in projects and enact safe whistleblowing policies.

It is recommended that project manager should:
- Prohibit all forms of bribery whether they taken place directly or through third parties.
- Prohibit team members from soliciting, arranging or accepting bribes intended for their benefit.

Eliminating bribery and corruption achieves a number of sustainable project outcomes including:
Strengthening brand reputation and market presence
- Eliminates risks of lawsuits and potential loss of social license to operate
- Attract and retain employees as research continually shows that employees, especially millennials, place emphasis on the reputation of the organization.

2.4.3 Anti-Competitive Behavior

An organization's policy and actions and reporting on anti-competitive behavior, including any legal action or complaints from regulatory organizations

It is recommended that project managers should:
- Prohibit collusive tendering and bid-rigging
- Prohibit agreements fixing prices

Anti Competitive Behavior adherence achieves a number of sustainable project outcomes including:
- Continuity of business or avoiding disruption
- Mitigating the risk of litigation or lengthy investigations
- Regulatory compliance

3. P5 and the Environmental Bottom Line

The environmental domain of sustainability concerns the impacts that portfolio, program and a have on living and nonliving natural systems, including land, air, water and ecosystems as well as the conservation of the diverse range of flora and fauna that live in these ecosystems. The environment is also the place in which people live and may consist of the street, suburb, town or region.

The legal framework for the environment is a body of law made up of treaties, conventions, declarations and other instruments including:

- UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage
- United Nations Framework Convention on Climate Change
- Country-specific legislation related to environmental protection, pollution and biodiversity conservation

The environmental domain contains a number of sustainability elements, which are categorized as:

- Transport
- Energy
- Water
- Consumption

3.1 Transport

This subcategory covers project process and product impacts as they pertain to transport and focuses on four areas: Local Procurement, Digital Communication, Traveling and Commuting, and Logistics.

While each element in this category is categorized under the environmental bottom line, each has significant social and economical impacts that should be accounted for when considering overall impact.

3.1.1 Local Procurement

The policies and procedures to procure resources, goods and services putting a stronger emphasis on sourcing from local suppliers. It is recommended that project managers give preference to local suppliers if allowed.

Local procurement adherence achieves a number of sustainable project outcomes including:

- Supporting the growth of the local economy
- Reducing CO2 from transportation
- Supporting local businesses and suppliers including improving supplier capacity and experience

Supports SDG 12, Target 7 “Promote public procurement practices that are sustainable, in accordance with national policies and priorities.”

3.1.2 Digital Communication

Utilizing technology for project communication to reduce the consumption of nonrenewable resources. It is recommended that project managers make best use of digital communications technology including such as video conferencing, and cloud based meeting and collaboration tools.

Digital communication adherence achieves a number of project outcomes including:
- Time and cost savings
- Allows the establishment of virtual project teams
- Hire the best people for the job regardless of location
- Reduction of stress associated with long-distance travel and being away from home for extended periods
- Reducing CO2 emissions from transportation

Supports SDG 9 Target 5c. "Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020."

3.1.3 Traveling and Commuting

Policies and procedures that limits unnecessary travel and ensures that the use of travel-related resources has to have as little impact on the environment as possible. By allowing members of the project team to work remotely or flexibly not cars are taken off the road which eliminates pollution, minimizes maintenance required on roads and streets and by not having to park a car eliminates the need to construct and maintain parking lots.

Reducing traveling and commuting achieves a number of sustainable project outcomes including:
- Reduction or elimination in stress in the project team
- Improvement in team member engagement
- Reduce fuel and transportation costs
- Improvements in project team productivity

3.1.4 Logistics

Policies and procedures on the transportation of goods or materials that ensures the transportation and the packaging of products are as environmentally friendly as possible.
It is recommended that the project manager give preference to:
- Use bulk purchasing arrangements to reduce the frequency of shipping
- Favoring of local suppliers to minimize extensive transportation requirements, which reduces air pollution, traffic congestion and Co2 emissions
- Packaging is designed in a way and uses specific materials minimize waste and allow for reuse, recovery or recycling

Sustainable logistics achieve a number of project outcomes including:
- Reduce transportation costs
- Reduced lead times for critical components and products
- Reduction or elimination of non-recyclable packaging

Supports SDG 13 "Take urgent action to combat climate change and its impacts. Supports climate change mitigation in holding the increase in global average temperature below 2 degrees Celsius, or 1.5 degrees Celsius above pre-industrial levels."

3.2 Energy

This subcategory covers project processes and product impacts as they pertain to energy resources and focuses on four primary areas: Energy used, CO2 Emissions, Clean Energy Return and Mixed Energy.

3.2.1 Energy Consumption

The type and amount of energy consumed by the project team and in the production of project outputs throughout the project life cycle. In addition, consideration is given to the total lifecycle that the project's product will consume during its operational lifespan and subsequent disposal.

It is recommended that project managers:
- Minimize the levels of embodied energy in materials used by the project
- Prioritize the use of renewable energy sources
- Establish design principles that seek energy efficiency as a priority

Energy consumption reduction achieves a number of sustainable project outcomes including:
- Reduced energy costs
- Reduction in CO2 and other emissions both during the project and over the useful life of the asset produced
- Increased market differentiation and brand protection

3.2.2 CO2 Emissions

The amount of carbon emissions that will be emitted during the project life cycle and the air quality impact during the project's product life cycle.

It is recommended that project managers:
- Measure the carbon footprint of the project and the asset produced
- Source alternative energy solutions
- Engineer a lower carbon emitting solution

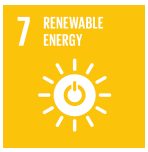
Emissions reduction achieves a number of sustainable project outcomes including:
Contribute to Supports sustainable and smart cities initiatives

3.2.3 Clean Energy Return

The type and amount of renewable energy that be generated by the project or project's product that can be returned and re-allocated. It is recommended that project managers examine opportunities generate clean energy as part of the project.

Clean Energy achieves a number of sustainable project outcomes including:
- Diversifying the types of energy being returned to the power grid
- Providing secondary energy sources for the community

- Reducing stress on the power grid

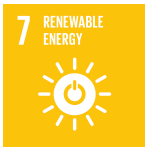


Support of SDG 7, Goal 2. "By 2030, increase substantially the share of renewable energy in the global energy mix."

3.2.4 Renewable Energy

The types of energy from renewable sources that is incorporated into the project's product and the consumption of renewable energy during the project's useful life. It is recommended that project managers at the least be aware of the types of energy that is utilized in the project and if possible advocate for the use of renewable sources.

Utilizing mixed energy achieves a number of sustainable project outcomes including:
- Reduce risk of energy price fluctuations and supply shortages
- Reduce environmental impacts and mitigate impacts to climate change.



Support of SDG 7, Goal 2. "By 2030, increase substantially the share of renewable energy in the global energy mix."

3.3 Water

This subcategory covers project process and product impacts as they pertain to water resources and focuses on three primary areas: Water Quality, Water Consumption and Water Displacement.

3.3.1 Water Quality

Policies and procedures that pertain to the impact on water quality that the project and or the project's outcome will have. It is recommended that project manager take into account the impact to the local water table and connecting bodies of water.

Taking into account water quality will produce a number of sustainable project outcomes including:
- Preserving of local bodies of water, rivers, and streams.
- Preserving ecosystems
- Preventing water-related diseases

3.3.2 Water Consumption

The amount of water that will be withdrawn by the project and or project's product during its life cycle. **It is recommended that the project manager take into account the amount of water necessary for the project and the impact to the local water table.**

Reducing water consumption achieves a number of sustainable project outcomes including:
- Reduces project costs for water use and water treatment
- Decreases the environmental impact of the project

Support SDG 6, Target 4. "By 2020, Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity."

3.3.3 Sanitary Water Displacement

Policies and procedures that pertain to the introduction of water into a different location due to a project or project's product. It is recommended that project manager take into account the impact the project will have on water displacement and ensure that water runoff will be handled appropriately and sanitarily.

Sanitary Water Displacement achieves a number of sustainable project outcomes including:
- Minimizes water related diseases and insect infestations

Support SDG 6, Target 6b. "Support and strengthen the participation of local communities in improving water and sanitation management."

3.4 Consumption

This subcategory covers project processes and product impacts as they pertain the consumption and extraction of raw materials, the processing of raw materials into intermediate and final products and the consumption of the final products and focuses on five primary areas: Recycling, Water Disposal, Reusability, Incorporated Energy, and Waste.

3.4.1 Recycling

Policies and practices regarding the sourcing and use of recycled products and materials and the project's adherence to recycling practices. It is recommended that project managers make use of recycled and or responsibly sourced materials whenever possible.

Responsible recycling achieves a number of sustainable project outcomes including:
- Protects natural resources by reducing the need to source raw materials
- Provides marketing opportunities where the project or organization can demonstrate their use of responsibly sourced materials
- Reduces costs of disposal by avoiding waste and through reuse or recycling

Supports SDG 12, Target 5 "By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse."

Supports SDG 12, Target 6 "Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle."

3.4.2 Disposal

The policies and procedures for disposal of resources and assets and the impact of the project's product end-of-life disposal on society and the environment.

It is recommended that project managers:
- Consider the whole of life cost, including the cost of disposal, as part of the business case of the project
- Explore options for reuse, recycling of the entire product or of component materials
- Design and build the project's product with product or material disposal in mind

Responsible disposal of unwanted resources and assets achieves a number of sustainable project outcomes including:
- Providing opportunities for new or additional revenue streams by identifying where unwanted resources can be used as inputs or raw materials for other organizations, creating a circular 'economy'
- Reduced costs of disposal of unwanted, toxic or hazardous substances
- Minimizing contamination and negative impact to ecosystems

3.4.3 Contamination and Pollution

Contamination or pollution of the air, water, or soil through the introduction of foreign or unwanted materials, chemicals, or fumes that results in the temporary or permanent degradation of an environment or ecosystem.

It is recommended that project managers:
Identify specific legislative and regulatory requirements and standards and put in place measures to ensure the project complies and does not contaminate or pollute
Give consideration of material and products that do not create by-products or waste that has the potential to contaminate or pollute.

Reduction of contamination and pollution achieves a number of sustainable project outcomes including:
Protects ecosystems from contamination
Safeguards against the spread of disease and sickness

Supports SDG 12, Target 4 "By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their lifecycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment."

Mitigates organizational risk associated with a spill or release of contaminants or pollutants

3.4.4 Waste

Policies and procedures with regard to waste disposal, the handling of waste during the project's lifecycle, and the type and amount of waste created by the project's product.

It is recommended that project managers:
- Minimize waste, rework and optimize the use of all available resources.
- Ensure that waste is disposed of responsibly.

Proper Waste adherence achieves a number of sustainable project outcomes including:
- Environmental protection
- Prevention of illness from contamination

4. P5 and the Financial Bottom Line

P5 focuses on the economic costs, benefits and risks on portfolio, program and projects to. In terms of all three, change initiative stakeholders need to be aware of the importance and flow of change from output, to capability, to outcome to eventual benefits. Specifically, P5 focuses on changes are logically and sustainably aligned to benefits and strategy:

The financial elements allow for sustainability-based decision making process from the viewpoint of portfolios, programs and projects, to maximize positive return for as many as possible.

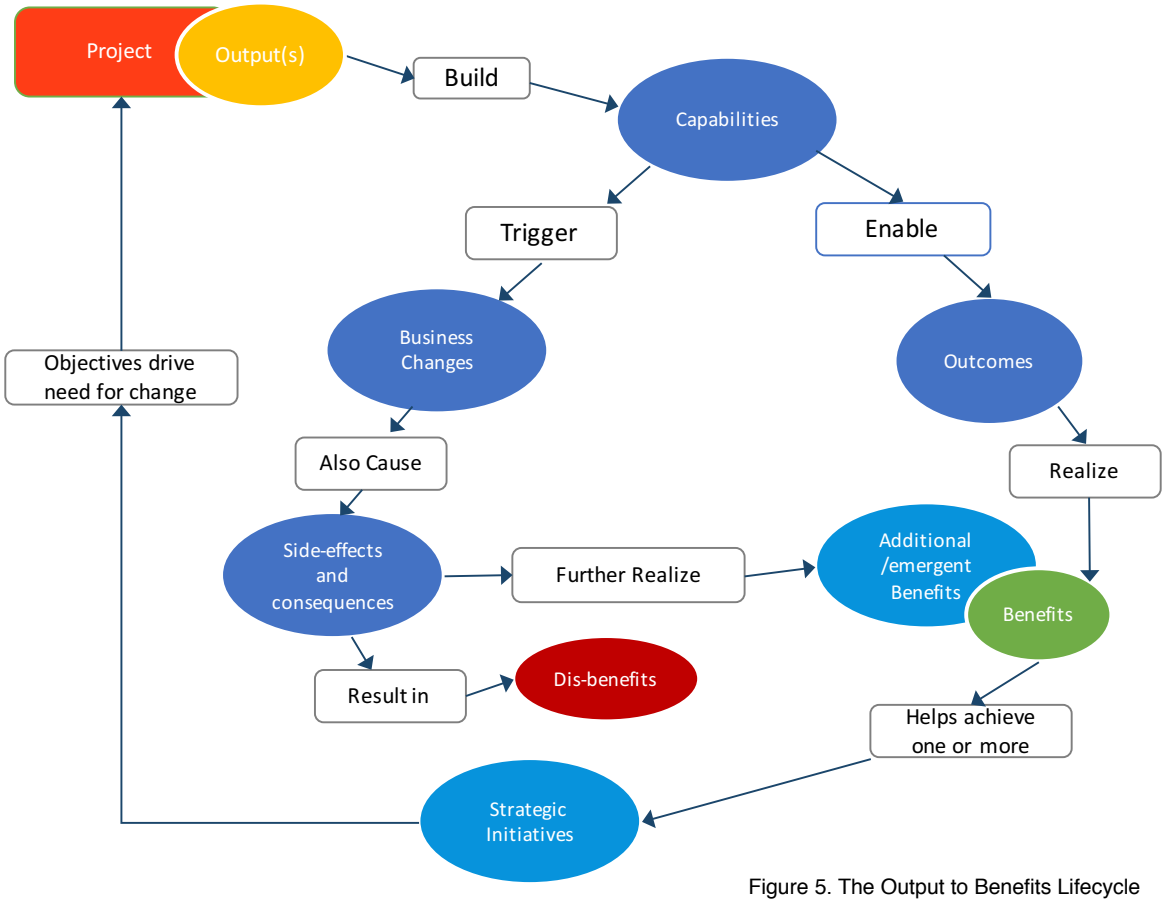


Figure 5. The Output to Benefits Lifecycle

The Output to Benefits Lifecycle

Output — The delivery, or output developed by a project from a planned activity.
Capability — The completed set of project outputs required to deliver an outcome; exists prior to transition.
Outcome — A new operational state achieved after transition of the capability into live operations
Benefit — The measurable improvement resulting from an outcome perceived by one or more stakeholders, which contributes towards one or more organizational objectives.

4.1 Return on Investment (ROI)

Economics is the science that deals with the production, distribution, and consumption of goods and services, or the material welfare of humankind. Finance is the management of revenues; the conduct or transaction of money matters generally, especially those affecting the public, as in the fields of banking and investment.

P5 views Return on Investment (ROI) from an economic perspective as the direct financial gain to be realized for investing in a portfolio, program or project. This subcategory covers the financial gain and net present value of an individual project.

Return on Investment (ROI) is more of a concept than an actual quantitative calculation. Return on Investment calculations can be manipulated because there is no standard model, approach or calculation. The intent though, is that investments return a positive benefit that can be quantified in financial terms, i.e., the investment provided more value than it cost in real dollars.

The project sponsor is accountable for providing the funding, resources and empowerment for the change initiative to maximize the value and benefits. The Output to Benefit Lifecycle, the project manager is responsible for the following sustainable goals:

- Maximizing value
- Minimizing costs
- Minimizing risk
- Maximizing positive benefit
- Minimizing dis-benefits

4.1.1 Benefit Cost Ratio

A benefit-cost ratio (BCR) is an indicator that attempts to summarize the overall value for money of a project or proposal. A BCR is the ratio of the benefits of a project or proposal, expressed in monetary terms, relative to its costs, also expressed in monetary terms. All benefits and costs should be expressed in discounted present values. BCR takes into account the amount of monetary gain realized by performing a project versus the amount it costs to execute the project. The higher the BCR the better the investment.

A complication with BCRs concerns the precise definitions of benefits and costs. These can vary considerably. However, for these calculations, quantifiable monetary values are required.

BCR = Discounted value of incremental benefits ÷ Discounted value of incremental costs

The project manager should evaluate this on an ongoing basis to ensure the project is cost effective.

Benefits Cost Ratio adherence achieves a number of sustainable project outcomes including:

- Justification for the change engagement
- Awareness and acceptance of the costs and benefits
- Formal acceptance of the projected asset lifecycle cradle to cradle costs
- Baseline for the actual success criteria of the engagement

4.1.2 Direct Financial Benefits

Monetary gains that are derived from from project outcomes.

Project managers should focus on ensuring that financial gain can be realized by the organization as a result of the project.

Achievement of direct financial benefits supports a number of sustainable project outcomes including:
- Support of the organization's long term sustainability
- Creates resources for future projects

4.1.3 Internal Rate of Return

The interest rate at which the present monetary value of all the incomes and expenditures associated with the project would be zero. Simply put, IRR is the interest rate at which a project breaks even

Calculating the Internal Rate of Return provides measures to rank projects to undertake that have equal costs.

4.1.4 External Rate of Return

The external rate of return is the rate of return at which the present worth of a series of cashflows would be zero, where all cash flowing in during the project is re-invested at the auxiliary rate of return, that being the best rate available in practice.

4.1.5 Net Present Value

Net Present Value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows.

Project managers should focus on the asset cradle to cradle or cradle to grave cost benefit, taking into account inflation and returns. The monetary total that results when the discounted value of the expected cost of a project is deducted from the discounted value of the expected gains

Using Net Present provides:
- A clear return on the original financial investment
- Takes into account a future dollar is worth less than a dollar at present (realistic).

4.2 Business Agility

P5 views business agility as the ability of an organization to easily adapt (from a financial perspective) in response to changes in the portfolio, program or project to meet project outcomes from a sustainability perspective. This sub-category focuses on two elements, flexibility/optionality in the project and increased business flexibility.

4.2.1 Flexibility/Optionality in the Project

The ability to balance the business case, project scope, cost, quality, personnel, reporting, risk, and benefits to the highest level of social and environmental value once impacts are assessed.

Project managers and project sponsors should work together to ensure flexibility exists to adjust requirements to achieve a higher degree of sustainability.

Adhering to flexibility/optionality in the project produces sustainable project outcomes including:
- Better degree of success
- Focus on benefits and the organization, the environment, and society not process and outputs
- Realization that the environment both internally and externally will most probably change
- Places emphasis on social return on investment

4.2.2 Increased Business Flexibility

The ability to balance the organizational benefits that will be realized from the project with the needs of society and the environment.

Project managers should be benefits focused and lead with the total asset lifecycle in mind.

Increased Business Flexibility adherence achieves the following sustainable project outcomes:
- Greater chance of project success and ongoing funding
- Better focus on the organization
- Empowers and organizations ability to achieve a continuous improvement culture
- Better focus on function as opposed to process and output
- Builds sustainable competitive advantage for the organization

4.3 Economic Prosperity and Stimulation

P5 views economic prosperity and stimulation as the financial stimulation that occurs as a result of the project. The two measures are Local Economic Impact and Indirect Benefits. The importance of this is to society in general, specifically communities and individual and family prosperity and empowered lifestyle.

Economic Stimulation adherence achieves a number of sustainable project outcomes including:
- It improves the impacted communities where the project takes place
- It improves the financial return for communities and its citizens
- It empowers the cycle of prosperity

4.3.1 Local Economic impact

The impact to the local economy as a result of the project.
Project managers should consider the impact to the local community as a key stakeholder group from employment, opportunity, financial and educational perspectives

Local Economic Impact adherence achieves sustainable project outcomes including:
- Creating opportunities for Local employment
- The local multiplier effect (providing additional economic benefit accrued to an area from money spent in the local economy). Potential for an improved standard of living for individuals who reside in the impacted area
- Tax revenue for the community to support services and infrastructure

4.3.2 Indirect Benefits

The financial benefits to the economy (society and environment) to be realized as a result of the portfolio, program or project that are not defined in the business case but materialize as a direct consequence of the investment. Projects induce side effects and consequences, intermediate benefits, other end benefits and end benefits.

Project managers should continuously review business cases and update them to include additional, costs, benefits and risks to provide validation and progress towards benefits.

Indirect Benefits adherence achieves some sustainable project outcomes including:
- Ownership and a focus on benefits realization
- Further justification for the value and benefits of the engagement
- Justification for similar engagements in the future

5. The P5 Impact Analysis

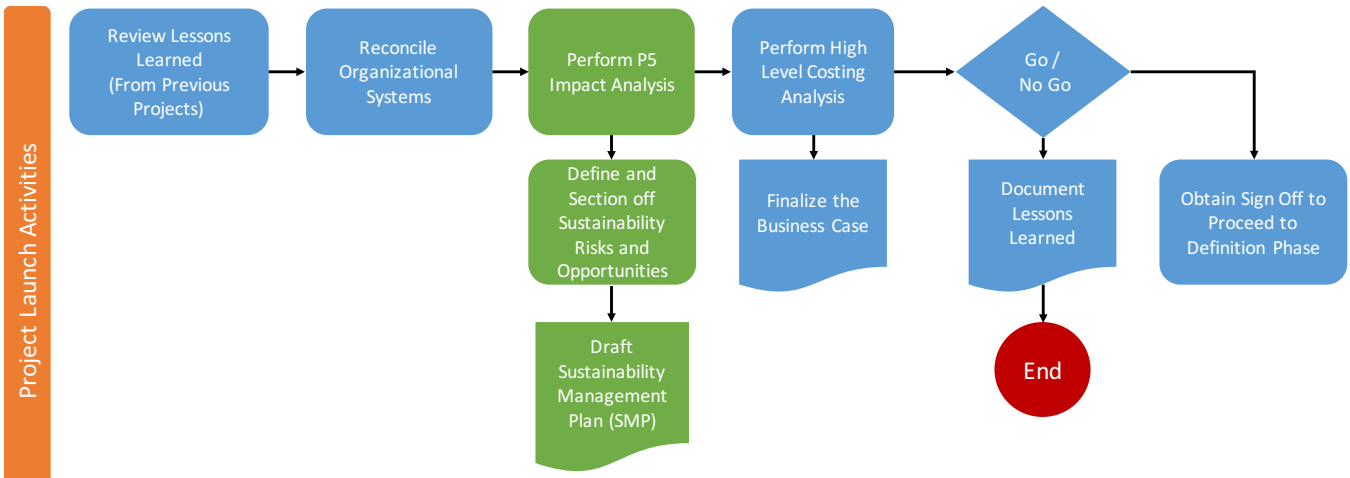


Figure 6. The GPM PRiSM Method Launch Phase

A P5 impact analysis is performed during the launch phase of a project according to the PRiSM methodology. The objective is to define and prioritize sustainability risks and opportunities from 360 degree standpoint to improve the project's value; the impact to the environment, society and economy the alignment to the organization's strategy.

The output gives key decision makers across functions the actionable information they need to justify changes to the project scope in socially and environmentally responsible activity.

5.1 Keys to Performing a P5 Impact Analysis

To perform a thorough P5 impact analysis, a project manager's understanding of the business case, project charter, project requirements and organizational sustainability goals, as well as a reviewing lessons learned from previous projects, is critical.

While the business base and project charter are the responsibility of the project owner to produce, process steps to gather, document and gain agreement on requirements based on the understanding of the documents organizational strategy are of the project manager (ICB 3.0)

5.1.1 Methods to Performing a P5 Impact Analysis

There are several ways to perform a P5 impact analysis. Developing a risk register using each element as a category is the simplest. The most effective way is to use a scoring system.

When using a scoring system, each product deliverable and project process is scored against each element of P5 based on a positive/neutral/negative scale, ranging from a neutral (o) high (+ or -3) , medium (+ or -2) , and low (+ or -3). The lowest value is equal to the lowest impact (-3 for example, is

the best possible score) Table 1 (below) displays an example. Deliverable 1 with +3 will need to be managed as a high risk whereas Deliverable 3 poses little to no risk.

This method is a simplified analytic hierarchy process, one of the most popular analytical techniques for complex decision-making problems. Note: An AHP hierarchy can have as many levels as needed to fully characterize a particular decision situation (Decision Making in, 2013).

Deliverable 1	Deliverable 2	Deliverable 3
+3 (High)	+3 High	+3 High
+2 Medium	+2 Medium	+2 Medium
+1 Low	+1 Low	+1 Low
0	0	0
-1 Low	-1 Low	-1 Low
-2 Medium	-2 Medium	-2 Medium
-3 High	-3 High	-3 Medium

TABLE 1. P5 Scoring

Product Example:

The average of the summation of scores will establish a baseline during initiation for each P5 bottom line, People, Planet, Prosperity, Process and Product, and items that have a plus score (negative) are a risk to the sustainability score of the project and will need to be managed. Processes are measured in the same manner.

Defining Sustainability Objectives from the Analysis
The P5 impact analysis will provide key insights on where the problem areas are from a sustainability perspective. Once the analysis has been completed, the items that pose a risk (anything with a + score) should be sectioned off, reviewed and mapped to into a Sustainability management plan (SMP).

5.1.2 P5 and the Sustainability Management Plan

The sustainability Management Plan (SMP) is an essential document that transforms the sustainability objectives into project objectives by listing out each item, by its initial score, liability and recommendation for remediation. P5 has an integral role in the document, as it supplies the sustainability criteria.

The SMP uses a change management process to map sustainability objectives derived from the P5 impact analysis into a column table that outlines the P5 practices (People, Planet or Prosperity,) sub-categories and elements as well as the reason for the inclusion, the initial score, any legal or regulatory conflicts and a proposed action.

P5 Category	P5 Sub Category	Element	Justification	Score	Legal Regulation	Proposed Action
Social	Labor Practices and Decent Work	Employment and Staffing	Staff are not provided safe working conditions	+ 3	Safety Violations	Immediate Safety Inspection

TABLE 2. SMP's P5 MATRIX

Projects with excellent change management effectiveness are six times more likely to meet or exceed project objectives (Prosci, 2013). The use of an SMP increases the likelihood for success for sustainability integration in project initiatives by managing change from a current state to a desired future state.

The SMP provides the information to allow for an in-principal decision to be made to address sustainability impacts during project initiation so that, when planning begins, project objectives are clearly defined.

P5 and Project Status Reporting

Project status reports are key to monitoring and controlling projects and should include at minimum the progress towards project milestones, current issues and status, current risks and how they are being addressed, a budget update and a P5 update. In support of a Log Frame Analysis the report provides key insight into the status on key elements of a project.

The P5 sustainability score is derived during the initial analysis sets the baseline for the project. As the project life cycle continues, risk is introduced and scope changes, or issues arise and it is important to re-evaluate your analysis and the sustainability score.

Including the score in the project status report keeps stakeholders up to date and provides key insights for the organization to support overall sustainability reporting.

The Project status report should include a section that includes the following information

Changes						
P5 Category	**P5 Sub Category**	**Element**	**Previous Score**	**New Score**	**Justification**	**Comments**
Social	Labor Practices and Decent Work	Employment and Staffing	+ 3	-1	All Safety Code issues have been resolved	Follow up on project site is scheduled weekly. Budget

Table 3. P5 and Status Reporting

P5 and Quality Management

In Quality Management, Project Managers utilize constraints that will deliver the intended result. Quality Management “involves determining quality policies, objectives, and responsibilities so that the project will satisfy the need for which it was undertaken.” In a simpler description, Quality Management is accountable for making sure that any work performed is done so correctly the first time to avoid rework and wasted energy or resources. Sustainability convergence points are contained within each process of the quality management knowledge/subject area.

The Quality Planning activity defines the inputs and controls for quality assurance activities. The inputs from ISOs 14001, 26000, 9001 and 50001 set the level of influence that the standards will have on defining “quality”. (Carboni, Gonzalez & Hodgkinson, 2013).

P5 and Project Closeout

Project closeout will occur when all of the deliverables have been signed off on, the implementation phase has been completed and the assets have been put into operations. In certain circumstances, such as with changes in viability or requirements, projects may be closed before planned completion.

Project closeout involves the completion of all product and project handover activities in a controlled manner (Carboni, Gonzalez & Hodgkinson, 2013).

A closure report is produced by the project manager to record the final outcome of the project against the success criteria, any issues outstanding and actions arising from closure.

P5 provides critical information to aid in project closure activities by supporting lessons learned for future project: information on the management of the product beyond the project lifecycle; key findings to provide to the sustainability officer in support of GRI, UNGC or similar sustainability reports and a final score for the project.

There is no “one size fits all” approach to close out reporting. Items that can be included in project closeout documents from a P5 perspective include:

- Measures taken to mitigate risks to sustainability based on P5 categories during the project
- Sustainability issues that arose during the project that could not be addressed or resolved and the reasoning
- New areas to focus on in future projects or in similar projects that are in process
- Individual bottom line scores and a final project score taken from a P5 impact analysis to aid in sustainability reporting and organizational learning

According to ISO 21500, opportunities developed from organizational strategy are sent as business cases through project governance, managed by the project organization through projects that encompass project management processes, product processes, and support processes and become deliverables that are transferred to operations.

Benefits are realized during the use phase to support organizational strategy.
Project governance using P5 is responsible for ensuring that the project addresses the impacts of the product on the environment and society during its economic life and during its decommissioning and disposal.

P5 and Sustainability Reporting

A sustainability report is an organizational report that gives information about economic, environmental, social and governance performance.

Establishing a sustainability reporting process helps them to set goals, measure performance and manage change.

A sustainability report is the key platform for communicating the performance information (both positive and negative) that is needed by organizations and all are are affected by them.

Sustainability reporting is therefore a vital step for managing change toward a sustainable global economy, one that combines long-term prosperity, social justice and environmental stewardship.

Outputs from P5 in project closing provide useful information to augment sustainability reports. Including the office or individual that is responsible for CSR with project closure activities and reports ensure that valuable information that could increase transparency or bolster the organization’s sustainability initiatives do not get lost or go unnoticed.

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Recommended Reading

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