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UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL

(UCI)

PROJECT MANAGEMENT PLAN FOR THE PROJECT ENTITLED BELIZE’S ENVIRONMENTAL ENFORCEMENT ECONOMIC ANALYSIS

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Master in Project Management (MPM) Degree

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**DEDICATION**

Dedication goes out to my family, friends and colleagues for their continued support, mentorship and encouragement.

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First and foremost, I would like to express my heartfelt gratitude to God for the countless opportunities and blessings I have received throughout my life.

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**ABSTRACT**

Belize, with a significant portion of its terrestrial and marine space under protected status, faces ongoing challenges in enforcing its environmental laws. The World Wildlife Fund (WWF) aims to execute a project which will evaluate these laws and develop a strategy to strengthen the enforcement within protected areas. However, the WWF Mesoamerica Belize field office operates with limited resources, making the need for an effective and efficient project management plan crucial.

This Final Graduation Project will develop a comprehensive project management plan based on best practices from the PMBOK® Guide Sixth Edition, tailored specifically to the WWF Mesoamerica Belize field office's needs. Furthermore, it will integrate subsidiary management plans for the project. By applying PMBOK’s principles, this project ensures a structured approach to managing scope, resources, time, and risk, facilitating the successful execution of the project. The benefits of using PMBOK in this context include enhanced project alignment with strategic goals, clear stakeholder communication, and improved resource allocation, all critical for overcoming the field office’s resource constraints and achieving sustainable environmental management outcomes.

**Key Words**: Project Management, Project Management Plan, Environmental Project, Environmental Enforcement

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**ABBREVIATIONS AND ACRONYMS**

CV Cost Variance

CPI Cost Performance Index

CPM Critical Path Method

EEF Enterprise Environmental Factors

FGP Final Graduation Project

GOB Government of Belize

GPM Green Project Management

NGO Non-Government Organization

OBS Organizational Breakdown Structure

OPA Organizational Process Assets

P5IA P5 Impact Analysis

PA Protected Area

PFP Project Finance for Permanence

PSC Project Steering Committee

PMBOK Project Management Body of Knowledge

PMI Project Management Institute

PMP Project Management Plan

PP Procurement Plan

RACI Responsible accountable consulted and informed

RAM Responsibility alignment matrix

RBS Resouce Breakdown Structure

SV Schedule Variance

TNC The Nature Conservancy

WBS Work Breakdown Structure

WWF World Wildlife Fund

**EXECUTIVE SUMMARY**

In November 2021, the Government of Belize entered agreement for a Blue Bond with the Nature Conservancy and signed a Memorandum of Understanding with the World Wildlife Fund for a Project Finance for Permanence (PFP) initiative. This bond and the PFP initiative will secure long term funding for marine protected areas in Belize. While the financial commitment is a positive move towards environmental conservation in Belize, enforcement of the existing environmental laws and regulations is still a challenge. Hence, the World Wildlife Fund is executing a project to analyze the enforcement of environmental laws in relation to marine and terrestrial protected areas in Belize. The project will also develop a strategy for the strengthening of enforcement of environmental laws in Belize. Through the efforts of the project, the enforcement climate and the economic implications will be analyzed and used to strengthen the governance and environmental enforcement frameworks for protected areas and marine ecosystems.

A project management plan is critical for the successful organization and effective management of the project. Not only will it provide a set of tools and workable framework for managing every step of the project from planning to closing stages but will also ensure that the processes are timely and transparent.

The general objective of the FGP is to create a project management plan utilizing the PMBOK® Guide Sixth Edition best practices to manage the execution of the project entitled “Belize’s environmental enforcement analysis”. There were twelve specific objectives. Objective one was to create a project charter which will formalize the start of the project conferring on the project manager the authority to assign company resources to project activities. Objective two was to create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities. Objective three was to create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project. Objective four was to create a project schedule management plan to ensure timelines for key activities align with planning and approval activities for project. Objective five was to create a cost management plan to ensure that adequate budgets are assigned, and sufficient cash flow is maintained throughout the life cycle. Objective six is to establish a project quality management plan for defining the minimum acceptable criteria for acceptance of deliverables. Objective seven was to develop the project resource management plan for the assignment of work packages and associated resources for proper management of the project. Objective eight was to define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications. Objective nine was to development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders. Objective ten was to create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project. Objective eleven was to create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project. Finally, objective twelve was to create a sustainable development management plan which articulates strategies to be used for incorporating sustainability measures into the project management plan.

The research methodology used was analytical, utilizing both qualitative and descriptive methods. Primary sources such as interviews and company documents were consulted. The PMBOK® Guide Sixth Edition provided the main framework for this project and was the primary secondary source of information supplemented with other key documents. A variety of project management tools were applied in the analytical process to thoroughly assess WWF’s current practices, leading to the development of recommendations to address the existing gaps in their project management practices.

The final graduation project was guided by the PMBOK® Guide Sixth Edition, ensuring effective planning, execution, monitoring, and closure through a comprehensive framework that prioritized sustainable and regenerative development. The project charter formally authorized WWF’s work, providing a foundation for the integrated project management plan, which coordinated various knowledge areas for maximum efficiency. Detailed plans were developed for scope, schedule, cost, quality, resource, communication, risk, procurement, and stakeholder management. Additionally, a sustainable development plan ensured the project’s environmental, social, and economic impact was considered. For each subsidiary plan were utilized to support project success and sustainability, with the ultimate aim of achieving a transformational impact.

In conclusion, it is strongly recommended that the Project Sponsor actively support the project manager and the organization in cultivating strategic partnerships to address sustainable development challenges in Belize and the broader region. The project manager should prioritize collaboration within the Integrated Change Control Process, ensuring effective management of project changes, and organize workshops to enhance stakeholder understanding of the scope and its evolution. Agile practices, such as the Scrum framework, should be incorporated to foster flexibility. The project manager must also integrate contingency buffers into critical path activities, ensure the team is proficient in MS Project for timely updates, and collaborate with Finance and Administration to align procurement strategies. Ongoing monitoring of expenses, cost-benefit analyses, and real-time budget tracking via an ERP system are essential for fiscal control. A proactive, collaborative approach to risk management, alongside regular quality assurance training and the use of quality control tools, will ensure consistent standards. Resource allocation should be informed by skills assessments, and weekly resource forecasts should guide planning. Effective communication with stakeholders, through the Communication Matrix and regular updates, will ensure continued engagement. Finally, the project manager should be strategically empowered, with support from a sustainability review board and the Project Steering Committee, to forge partnerships with key environmental organizations and ensure the project aligns with its social, environmental, and community objectives.

# INTRODUCTION

### Background

Belize is a small country in Central America rich in cultural and ecological resources with approximately nineteen percent of its national territory under some form of conservation management. However, Belize faces many environmental threats. These include but are not limited to high deforestation rates, improper solid waste management, rapid coastal development, and the recent discovery of sweet crude oil. These environmental threats impact some of Belize’s key sectors such as tourism, agriculture and fisheries. The World Wildlife Fund is an international NGO with a field office in Belize. It works closely with many stakeholders which including public and private sector groups, and communities towards efforts which help conserve Belize’s natural resources through sustainable programming and national policies.

In November 2021 at the Conference of Parties (COP26), the Government announced that it signed a US$364 million-dollar Blue Bond agreement that provided a debt for nature swap with The Nature Conservancy. This deal was an innovative financial transaction has been the largest debt restructuring for marine conservation to date. Furthermore, it reduced the country’s debt of US$553 million by approximately US$250 million (TNC, November 3, 2021). Belize’s Prime Minister also signed a Memorandum of Agreement with the World Wildlife Fund to create a Project Finance initiative for Permanence (PFP) by 2025. The PFP is designed to aid Belize in helping to meet its climate and environmental goals by providing sustainable financing for Belize’s marine protected areas and other coastal ecosystems. Through these commitments, Belize will be able to generate an estimated US$180M for marine conservation, in support of Belize’s commitment to protect 30% of its ocean (including mangroves, coral reefs and spawning sites), strengthen governance frameworks for domestic and high sea fisheries, and establish a regulatory framework for coastal blue carbon projects.

The World Wildlife Fund has and continues to work with countries across the globe to meet the challenge of long-term sustainable financing for conservation. The Project Finance for Permanence approach is defined as a holistic approach to area-based conservation. PFPs work to secure important policy changes and funding necessary to meet specific conservation goals over a defined long-term period in countries. The WWF is now working with Belize to create a successful PFP. While Belize has committed to increasing the percentage protected ecosystems, monitoring and enforcement of environmental laws remains a challenge. This project being executed by the World Wildlife Fund will analyze the current environmental enforcement framework, mapping out the differences between how the system should work vs. how it works, analyze legislative gaps, and make recommendations for improving the regulatory framework for protected areas in Belize. This knowledge base will help to define some of the environmental enforcement support which is needed in the Belize PFP. This project will outline the development of a project management plan for the management of the project. In so doing, it will create an effective platform for the management and execution of all processes from planning to the closing of the project.

### Statement of the problem

The World Wildlife Fund (Belize) office is has a small staff of seven persons comprised of a Senior Program Officer who serves as the country representative, four technical officers and two finance and admin staff. The technical officers are responsible for managing several projects simultaneously. Hence, having a project management plan will ensure that adequate resources are allocated to the project as well as improve the project administration. The tools and plans which comprise the project management plan will provide an effective platform for securing commitment and providing timeline monitoring and updates on all activities within the project scope.

### Purpose

The project management plan (PMP) is a critical document which will delinate the boundaries of the project, as well as the schedule for key deliverables and milestones throughout the execution of the project. It will map out the processes from project conception, initiation, planning, execution and closure. These include the processes relating to the development of the project schedule, assigned resources and controls, integration management, quality management, stakeholder management, etc. It will also document the lessons learnt, and changes (if applicable) which occur. The latter is critical for future project development. This plan, including the tools and plan templates for the respective plans will be developed and used by the Project Manager throughout the project life cycle.

### General objective

To create a project management plan for Belize’s environmental enforcement analysis.

### Specific objectives

1. To create a project charter which will formalize the start of the project confering on the project manager the authority to assign company resources to project activities.
2. To create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities.
3. To create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project.
4. To create a project time management plan to ensure timelines for key activities align with planning and approval activities for project.
5. To create a cost management plan to ensure that adequate budgets are assigned and sufficient cash flow is maintained throughout the life cycle.
6. To establish a project quality management plan for defining the minimum acceptable criteria for acceptance of deliverables
7. To develop the project human resource management plan for the assignment of work packages and associated resources for proper management of the project.
8. To define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications.
9. To development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders.
10. To create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project.
11. To create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project.
12. To create a sustainable development management plan which articulates strategies to be used for incorporating sustainablity measures into the project management plan.

# THEORETICAL FRAMEWORK

### 2.1 Company/Enterprise framework

#### 2.1.1Company/Enterprise background

The World Wildlife Fund (WWF) is the largest privately supported conservation organization in the world. It was established in 1961 and has since grown to work in over one hundred countries. Its work in conservation includes not only protection of endangered species and landscapes, but also helping to address the larger global threats and forces that impact them. This new strategy places people at the center of the system, and organizes the WWF work around six key areas: forests, marine, freshwater, wildlife, food and climate. The WWF is sectioned into different regions. WWF Belize is part of the WWF Mesoamerica. WWF Mesoamerica head office is located in Guatemala with field offices in Belize and Honduras, and ongoing work in El Salvador, Nicaragua and Costa Rica. On a regional level, WWF Mesoamerica is also a part of the WWF’s Latin American and Caribbean Secretariat.

#### 2.1.2 Mission and vision statements

**WWF’s Mission**

WWF works for a living planet, and its mission is to stop the degradation of the earth’s natural environment and build a future in which the human being lives in harmony with nature (World Wildlife Fund. [WWF] (n.d.).

**WWF’s Vision**

World Wildlife Fund’s vision is to build a future in which people live in harmony with nature (World Wildlife Fund [WWF], n.d.). The WWF achieves its mission and vision through its work with people at all levels. This includes local communities, large corporations and multinational organizations, and governments. Through its works, the seek to promote the conservation practices which balance human activities are in balance with nature. The WWF champions the protection of creatures which have no voice, and promote conservation in a way which will ensure prosperity for humans and nature for generations to come (WWF, n.d.).

#### 2.1.3 Organizational structure

Currently WWF (Belize) is a very small team which consists of three staff members.

WWF Belize

Figure 1 WWF (Belize Field Office) Organizational structure(source: own work)

#### 2.1.4 Products offered

Though its conservation work, WWF (Belize) seeks to educate and influence people into acting sustainably with respect to the use of natural resources. This includes working with government agencies and other organizations which set policies and regulations that impact nature. Their work includes the funding of projects which build capacity, promote education, collect data, conduct studies and research or other initiatives. These initiatives may be at the community level, with academia, private or public sector. Belize’s main economic sectors are tourism and fisheries. Both of these are heavily dependent on a healthy environment in order to continue to positively impact the economy and local communities. Hence WWF’s work is integrally linked to local opportunities and constraints. As such, the WWF will be executing a project to analyze the enforcement of environmental laws in relation to marine and terrestrial protected areas in Belize. The project will also develop a strategy for the strengthening of enforcement of environmental laws in Belize.

### 2.2 Project Management concepts

#### 2.2.1 Project

The Project Management Institute’s PMBOK® Guide, Sixth Edition defines a project as “a temporary endeavour undertaken to create a unique product, service or result” (PMI, 2017, p. 4). For the purposes of this FGP, a project management plan will be created for the project which will be executed by WWF Belize. The project is to analyze the enforcement of environmental laws in relation to marine and terrestrial protected areas in Belize and will develop a strategy for the strengthening of enforcement of environmental laws in Belize. The deliverables will be reports which will be produced after collected data on the stated topic.

#### 2.2.2 Project management

Project Management is defined as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (PMI, 2017, p.10). In this instance, the project management will be done by the WWF Belize staff. Hence all elements would be developed based on project management best practices, within the context of the operational procedures of the WWF. In this way, the benefits to WWF of utilizing best practices for project management include:

* meeting the larger organizational objectives which are linked to their strategic plans,
* satisfying stakeholders,
* increased chances of project success by creating timely solutions
* optimizing organizational resources being utilized
* and managing constraints effectively.

Given that the WWF works closely with the Government of Belize to improve its environmental policies and regulations, this project offers timely input into gauging the existing environmental regulations and working the key stakeholders towards improving the gaps which exist.

The Project Manager will be assigned from the WWF Belize team, and will lead the process of developing and executing the project management plan. Given the small size of the WWF Belize team, it should be noted that staff routinely manage several projects simultaneously. Despite managing many projects simultaneously, it should be noted that “project management focuses on interdependencies within a project to determine the optimal approach for managing the project” (PMI, 2017, p. 14). Hence the management processes, tools and techniques in place will ensure proper coordination and reporting for effective and efficient operations.

#### 2.2.3 Project life cycle

The project life cycle provides a framework for managing any type of project. It had various phases that a project goes through from start to its completion. The project will follow a simple waterfall model. Figure 2 models the four phase cycle. For each phase of life cycle activity, the Project Manager must have two clear things in mind:

1. The objectives of each project phase;
2. The products which will be derived from each activity. These must be tangible goods or documentation.

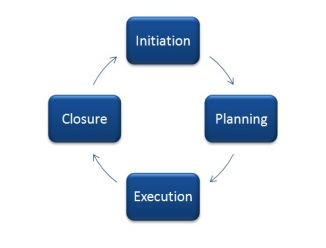


Figure – The Project Management Life Cycle. Reprinted from Project-Management-Skills.com. Copyright 2010 – 2021.

During the initiation stage, the project statement of work will be developed, along with the business case. This information will be used by the Project Manager to create the Project Charter. The Project Charter is what authorizes the project, and will document the initial project requirements. This information will include, but not be limited to the purpose of the project, mission and vision, measurable objectives and success criteria, key milestones, schedule and budget. At this stage, a stakeholder analysis should be conducted to ensure that all key stakeholders are identified who can influence and/or impact the project. Lastly, good practice dictates that the project team be defined at this point. This will ensure that the team is onboard at the optimal time and partake in the planning activities which precede the project execution phase.

The Planning phase is the second stage of the cycle. During this phase, the Project Manager will detail and define how the project will be done. This occurs in two parts: strategic planning and implementation planning. During the strategic planning what and how the project will be done will be defined. The project plan which is developed at this stage will activities, tasks and timelines, as well as the budget for the respective activities. This is also when project risks are identified. Any potential problems, as well as mitigation steps are defined in order to reduce or avoid the impact of the risks identified. The implementation planning then maps out how each step will proceed. All stakeholders and the communication plan which sets out the relevant information required for each stakeholder and how that information would be communicated should be established at this point. Finally, a quality management plan will be developed. This includes the quality objectives, the control measures and the criteria which need to be met in order for the deliverables to be accepted.

During the project execution stage, all of the project activities will be completed. The Project Manager must closely monitor and track the activities and implement controls where necessary. The project deliverables which are implemented will need to be accepted by the relevant stakeholders at this point. These stakeholders would include a mix of internal stakeholders (WWF Belize) and external stakeholders (e.g. key public sector and enforcement agencies from the Government of Belize).

Finally, the project closure is the last phase. During this phase, the Project Manager must verify that all the criteria that were previously defined have been met. By this time, all results based on the defined deliverables would have been completed. All project documentation would be updated and delivered. All supplier contracts would be closed off, and project resources released. This would be formally documented and used as an artifact to share with respective stakeholders. This would also include a postmortem of the project’s performance which can be a great source of information for future projects and initiatives.

Figure 3 below summarizes the project life cycle and its linkages with the process groups and ten knowledge areas being utilized for the development of the FGP. The FGP will be customized to the specific needs of the WWF but follow the framework below.

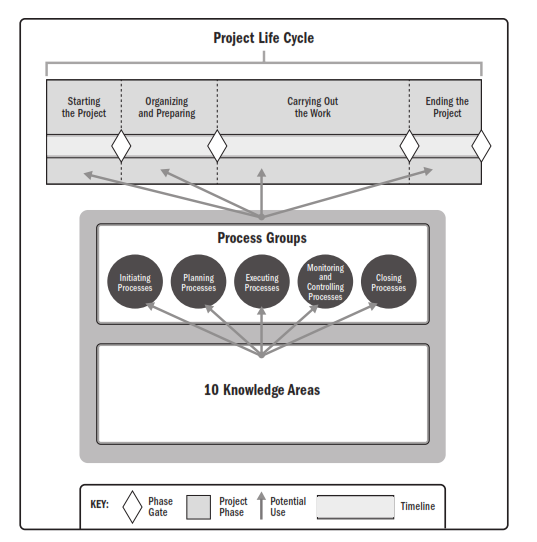


Figure 3 – Interrelationship of PMBOK® Guide Key Components in Projects. Reprinted from *A Guide to the Project Management Body of Knowledge (p.18)*, Project Management Institute, 2017. Copyright 2017 by PMI, Inc.

#### 2.2.4 Project management processes

The project management framework presents a very structured process for managing projects and achieving the specific objectives. Figure 5 below summarizes the relationship between the project management process groups and the knowledge areas. Throughout the project, the Project Manager will use a number of processes in order to complete the project. These processes are grouped in a logical manner and are independent of the project phases. The PMBOK® Guide defines the five project management process groups as follows (PMI, 2017, p. 23):

1. Initiating Process Group – are performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase
2. Planning Process Group – are processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.
3. Executing Process Group – are processes performed to complete the work defined in the project management plan to satisfy the project requirement.
4. Monitoring and Controlling Process Group – are the processes required to track, review and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes.
5. Closing Process Group – are the process performed to formally complete or close the project, phase, or contract.

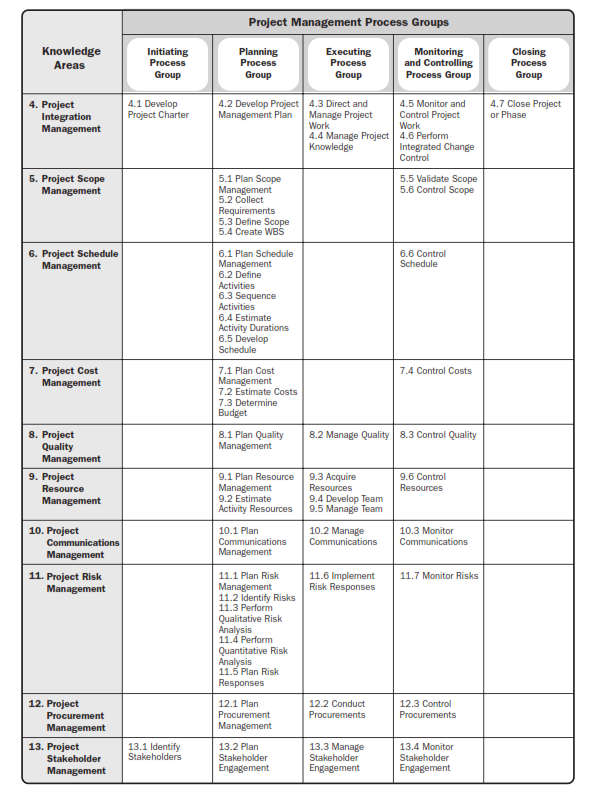


Figure 4 - Project Management Process Group and Knowledge Area Mapping. Reprinted from A Guide to the Project Management Body of Knowledge (p.25), Project Management Institute, 2017. Copyright 2017 by PMI, Inc.

#### 2.2.5 Project management knowledge areas

Based on the Project Management Institute’s PMBOK® Guide, Sixth Edition, there are ten knowledge areas used in project management. Each knowledge area includes processes from the five project management life cycle phases: initiation, planning, executing, monitoring and controlling, and closing. For the purposes of completing the FGP, all of these knowledge areas will be utilized in developing the project management plan for the execution of the project entitled “executing a project to analyze the enforcement of environmental laws in relation to marine and terrestrial protected areas in Belize. The project will also develop a strategy for the strengthening of enforcement of environmental laws in Belize”. These are:

* Project integration management – this includes the coordination between the resources, stakeholders and other project elements to ensure the proper execution of the project.
* Project scope management – this includes the definition of work to be completed within the project.
* Project time management – this includes the listing of tasks, deliverables, duration (inclusive of start and finish dates), and the stakeholder responsible for each task.
* Project cost management – this includes the estimation, allocation and controlling of all costs associated with the project.
* Project quality management – this includes all the processes that would necessary to ensure that quality products are delivered on time and within budget, and that stakeholder satisfaction is guaranteed.
* Project resource management – this involves the management of all project resources (human resources, material, equipment, knowledge and time).
* Project communications management – this includes all of the key messages and modality for communication that will be utilized to ensure that the right information is sent and understood between the respective stakeholders.
* Project risk management – includes the identification, analysis and control of risks necessary to ensure that impacts to the project are minimized or eliminated.
* Project procurement management – this includes the management processes involved in obtaining goods, services and supplies for the project.
* Project stakeholder management – this includes the processes for identifying project stakeholders and their power and interest to ensure that maximum stakeholder satisfaction.

#### 2.2.6 Other Theories

Project management within NGOs (Non-Governmental Organizations) is often guided by various theories that help streamline processes, ensure effective resource allocation, and maximize social impact. Below is a summary of some key project management theories used in NGOs:

Logical Framework Approach (LFA): The Logical Framework Approach is widely adopted by NGOs to plan, monitor, and evaluate projects. It focuses on defining project goals, identifying necessary resources, setting indicators for measuring progress, and assessing risks. LFA ensures that all stakeholders, including donors and beneficiaries, are aligned with the project’s objectives and expected outcomes (Kusters, 2016). Initially developed in the 1960s by the United States Agency for International Development (USAID) as a tool for managing foreign assistance projects, it was designed to address the need for clear project goals, measurable outcomes, and effective monitoring and evaluation (Bamberger, Rugh, & Mabry, 2012). The methodology was later refined and adopted by various international organizations, including NGOs, as it gained recognition for its ability to bring clarity to project objectives and outcomes. By the late 1980s, the Logical Framework was introduced as a formal tool in development projects, particularly within sectors such as health, education, and rural development. The approach’s emphasis on defining explicit objectives and identifying assumptions aligned with the growing demand for accountability and evidence-based results in development initiatives (European Commission, 2004). As NGOs became more involved in international development and humanitarian efforts, the Logical Framework’s application expanded beyond its initial use in USAID-funded projects. It was incorporated into the programming strategies of numerous development organizations, particularly due to its ability to manage complex, multi-sectoral projects by breaking them down into clear objectives and measurable results (Crawford & Bryce, 2003). During the 1990s, the Logical Framework Approach evolved further, with NGOs increasingly adopting it as part of a broader trend toward results-based management (RBM). This shift in focus was driven by the increasing need for effective project monitoring and evaluation in the context of international development funding. The LFA allowed for improved communication between donors, implementers, and stakeholders by providing a common framework for assessing project progress and impact (Haug, 2013). Today, the LFA remains a core tool used by NGOs to ensure project effectiveness, transparency, and accountability in the management of resources.

Theory of Change (ToC): This theory emphasizes understanding the long-term goals of a project and working backward to identify the necessary preconditions and activities that will lead to those goals. It helps NGOs define a clear pathway for achieving social change and is particularly useful in complex, long-term development projects (Clark & Anderson, 2016).

Results-Based Management (RBM): RBM is a performance-oriented approach used by NGOs to monitor and evaluate the effectiveness of their projects. It focuses on achieving specific results through the systematic tracking of inputs, activities, outputs, and outcomes. This method ensures that an NGO’s efforts are directly tied to measurable, impactful outcomes (Crawford & Bryce, 2003).

Participatory Project Management: NGOs often use participatory approaches to engage local communities in project decision-making. This approach values the inclusion of community members in the design, implementation, and evaluation phases of a project. It emphasizes empowerment, accountability, and capacity-building among stakeholders (Tandon, 2015).

Agile Project Management: While Agile is primarily used in software development, NGOs have adopted it for its flexibility and iterative approach, particularly in rapidly changing environments. Agile project management allows NGOs to adapt to unforeseen circumstances, continuously improve project processes, and respond to the needs of stakeholders with greater efficiency (Patel, 2017).

# METHODOLOGICAL FRAMEWORK

### 3.1 Information sources

#### 3.1.1 Primary sources

Primary sources of information offer firsthand information on a particular subject matter. These may include original documents such as speeches, manuscripts, letters, interviews, news footage, official records etc. What is important to note in this instance is that the information recorded or created was done by a participant of the event. For the purposes of this Final Graduation Paper, primary sources of information will be interviews, official records and meeting minutes.

#### 3.1.2 Secondary sources

Secondary sources of information interpret or analyzes primary sources (Wiggins, n.d.). Secondary sources may include elements such as pictures, quotes, or graphics of primary sources. Examples of secondary sources include journal articles, textbooks, magazine articles, criticisms, commentaries, etc. Mostly secondary sources will be used to guide the development of the FGP. In particular the PMBOK® Guide, 6th Edition, along with other subject matter texts relating to the various sections developed. The chart below summarized the information sources which will be used for the various FGP sections.

##### Chart 1 Information sources (Source: J. Neal, The Author, December 2021)

|  |  |  |
| --- | --- | --- |
| **Objectives** | **Information sources** | |
| **Primary** | **Secondary** |
| 1. To create a project charter which will formalize the start of the project confering on the project manager the authority to assign company resources to project activities. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition |
| 1. To create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition |
| 1. To create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition |
| 1. To create a project time management plan to ensure timelines for key activities align with planning and approval activities for project. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition, Practice Standard for Scheduling 3rd Edition |
| 1. To create a cost management plan to ensure that adequate budgets are assigned and sufficient cash flow is maintained throughout the life cycle. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition, Practice Standard for Project Estimation 2nd Edition |
| 1. To establish a project quality management plan for defining the minimum acceptable criteria for acceptance   of deliverables | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition |
| 1. To develop the project resource management plan for the assignment of work packages and associated resources for proper management of the project. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition, Practice Standard for Project Estimation 2nd Edition |
| 1. To define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition, The Standard for Risk Management in Portfolios, Programs and Projects |
| 1. To development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition |
| 1. To create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide 6th Edition, Practical Project Stakeholder Management: Methods, Tools and Templates for Comprehensive Stakeholder Management |
| 1. To create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project. | Meeting minutes, personal interview with technical experts. | PMBOK® Guide, The Procurement Models Handbook, Procurement Methods: Effective Techniques: Reference Guide for Procurement Professionals |
| 1. To create a sustainable development plan which articulates strategies to be used for incorporating sustainability measures into the project management plan. | Meeting minutes, personal interview with technical experts. | GPM P5 Standard for Sustainability in Project Management |

### 3.2 Research methods

3.2.1 Analytical method

The analytical method is a systematic approach to problem-solving that is highly effective in developing a project management plan. By breaking the problem into smaller, manageable components, the analytical method allows for a thorough examination of potential solutions (Kerzner, 2017). Once the problem is identified, project managers can use various analytical tools, such as SWOT analysis or risk assessments, to evaluate alternative approaches.

In the next stage, decision-making processes are employed to select the most feasible and effective solution. This involves analyzing resource requirements, potential constraints, and stakeholder expectations (Turner, 2016). The final step is integrating these solutions into a structured project management plan, including defined goals, timelines, and performance indicators. By systematically applying the analytical method, project managers can ensure that their plans are data-driven and tailored to the project’s unique needs (PMI, 2021).

Following this, an appropriate process for determining solution elements must be utilized. A number of methods are available and suitable for use in the development of a project management plan. These methods will be described in the table below.

3.2.2 Research method

The Cambridge Dictionary defines research method as a particular way of studying something in order to discover new information about it or better understand it. For the purposes of this paper, the operational approaches and techniques being utilized will be to develop a project management plan for a project. This project will analyze various methods to determine the best methodology to be used for achieving the project goals and objectives. This process will utilize both primary and secondary data sources, qualitative data, and be descriptive.

##### Chart 2 Research Methods (Source: J. Neal, The Author, December 2021

|  |  |
| --- | --- |
| **Objectives** | **Research methods** |
| Analytical Research Method |
| 1. To create a project charter which will formalize the start of the project confering on the project manager the authority to assign company resources to project activities. | Document analysis of company policies and past project charters to establish best practices.  Stakeholder interviews to determine resource needs and approval processes. |
| 1. To create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities. | Process mapping to identify resource allocation steps.  Gap analysis to address integration challenges in resource and project planning. |
| 1. To create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project. | Stakeholder analysis using surveys to identify key requirements.  Benchmarking scope definitions against similar successful projects. |
| 1. To create a project time management plan to ensure timelines for key activities align with planning and approval activities for project. | Critical path method (CPM) for timeline development.  Historical data analysis to estimate time for similar activities. |
| 1. To create a cost management plan to ensure that adequate budgets are assigned and sufficient cash flow is maintained throughout the life cycle. | Cost-benefit analysis to allocate budgets effectively.  Sensitivity analysis to evaluate financial risks and cash flow variability. |
| 1. To establish a project quality management plan for defining the minimum acceptable criteria for acceptance of deliverables | Quality standards review to align with industry benchmarks.  Root cause analysis to address past quality issues in similar projects. |
| 1. To develop the project resource management plan for the assignment of work packages and associated resources for proper management of the project. | Resource levelling to ensure efficient use of resources.  Work breakdown structure (WBS) analysis to assign tasks appropriately. |
| 1. To define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications. | Risk assessment matrix to categorize and prioritize risks.  Scenario analysis to develop mitigation strategies for sustainability risks. |
| 1. To development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders. | Network analysis to identify communication flow and bottlenecks.  Sentiment analysis of stakeholder feedback for effective messaging. |
| 1. To create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project. | Power-interest grid analysis for stakeholder categorization.  Stakeholder mapping to plan engagement strategies. |
| 1. To create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project. | Vendor evaluation matrix to compare supplier capabilities.  Market analysis to identify sustainable procurement trends. |
| 1. To create a sustainable developmentplan which articulates strategies to be used for incorporating sustainablity measures into the project management plan. | Lifecycle assessment to evaluate environmental impacts.  Comparative analysis of sustainability strategies in similar projects. |

### 3.3 Tools

The Project Management Institute’s PMBOK® Guide 6th edition defines a tool as “something tangible, such as a template or software program, used in performing an activity to produce a product or result” (PMI, 2017, p. 725). Chart 3 below summarizes the tools that will be used to achieve each of the objectives listed.

##### Chart 3 Tools (Source: J. Neal, The Author, December 2021)

|  |  |
| --- | --- |
| **Objectives** | **Tools** |
|
| 1. To create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities. | 1. Expert Judgement  2. Data Gathering (brainstorming, focus groups, interviews)  3. Meetings |
| 1. To create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project. | 1. Expert Judgement  2. Data Gathering (brainstorming, focus groups, interviews)  3. Meetings  4. Data Analysis |
| 1. To create a project time management plan to ensure timelines for key activities align with planning and approval activities for project. | 1. Expert Judgement  2. Data Gathering (brainstorming, focus groups, interviews)  3. Meetings  4. Decomposition  5. Estimating  6. Critical Path Method |
| 1. To create a cost management plan to ensure that adequate budgets are assigned and sufficient cash flow is maintained throughout the life cycle. | 1. Expert Judgement  2. Data Analysis  3. Meetings |
| 1. To establish a project quality management plan for defining the minimum acceptable criteria for acceptance of deliverables | 1. Expert Judgement  2. Data Analysis  3. Meetings |
| 1. To develop the project human resource management plan for the assignment of work packages and associated resources for proper management of the project. | 1. Expert Judgement  2. Data Analysis  3. Meetings  4. Virtual Teams |
| 1. To define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications. | 1. Expert Judgement  2. Data Analysis  3. Meetings |
| 1. To development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders. | 1. Expert Judgement  2. Data Analysis  3. Meetings |
| 1. To create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project. | 1. Expert Judgement  2. Data Analysis  3. Meetings |
| 1. To create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project. | 1. Expert Judgement  2. Data Analysis  3. Meetings |

(Note: own work)

### 3.4 Assumptions and constraints

The Project Management Institute defines an assumption as a “factor in the planning process considered to be true, real, or uncertain, without proof of demonstration” (PMI, 2016, p.1). On the other hand, PMI defines constraints as “a limiting factor that affects the execution of a project, program, portfolio, or process” (PMI, 2016, p.2). Chart 4 below summarizes the assumptions and constraints for each of the FGP objectives below.

##### Chart 2 Assumptions and constraints (Source: J. Neal, The Author, December 2021)

| **Objectives** | **Assumptions** | **Constraints** |
| --- | --- | --- |
|
|  |
| 1. To create a project charter which will formalize the start of the project confering on the project manager the authority to assign company resources to project activities. | The project charter will be created and approved before all the other project documents. | The time allocated for development is limited. |
| 1. To create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities. | The project charter will be created and approved before all the other project documents. | The time allocated for development is limited. |
| 1. To create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project. | All necessary information as been made available in order to develop a realistic and sustainable scope management plan. | Based on time and budget, the scope may be reduced to explore only the marine environmental enforcement issues. |
| 1. To create a project time management plan to ensure timelines for key activities align with planning and approval activities for project. | The duration of the project and the key activities are sufficient. | The project duration including planning shall not exceed fifteen months |
| 1. To create a cost management plan to ensure that adequate budgets are assigned and sufficient cash flow is maintained throughout the life cycle. | The budget allocation is sufficient to address both the marine and terrestrial environmental enforcement analysis. | The budget allocation must remain within a ±10% variance of the approved baseline budget, ensuring no overrun that impacts the financial feasibility of the project. |
| 1. To establish a project quality management plan for defining the minimum acceptable criteria for acceptance of deliverables | All technical and administrative quality requirements will be identified. | Quality assessments are needed only for data and report analysis. |
| 1. To develop the project human resource management plan for the assignment of work packages and associated resources for proper management of the project. | All specialists’ services which are required are available in Belize. | Use of external consultants (if required) should not cause delays in the process. |
| 1. To define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications. | There is sufficient information available which will mitigate or eliminate most risks. | All of the project risks will need to be identified at the planning stages. |
| 1. To development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders. | All communication will be conducted in English. | Virtual communication is dependent on reliable and steady internet connectivity. |
| 1. To create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project. | All stakeholders will be accessible (despite COVID 19 restrictions) to participate in the consultations. | Stakeholders may have limited availability and access to online modalities for consultations. |
| 1. To create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project. | All materials and specialists services which are required are available in Belize. | Use of external consultants (if required) should not cause delays in the process. |
| 1. To create a sustainable developmentplan which articulates strategies to be used for incorporating sustainablity measures into the project management plan. | All materials and specialists services which are required are available in Belize. | Use of external consultants (if required) should not cause delays in the process. |

### 3.5 Deliverables

##### Chart 5 Deliverables (Source: J. Neal, The Author, December 2021)

|  |  |
| --- | --- |
| **Objectives** | **Deliverables** |
|
| 1. To create a project charter which will formalize the start of the project confering on the project manager the authority to assign company resources to project activities. | Project Charter |
| 1. To create a comprehensive integration management plan to ensure adequate incorporation of resources and planning for project activities. | Project Charter  Project Management Plan  Issues Log  Change Requests  Assumptions Log  Requirements documentation  Lessons Learnt register |
| 1. To create a sustainable scope management plan to define key requirements and expectations of the relevant stakeholders for the project. | Scope Management Plan  Requirements Management Plan  Requirements traceability matrix  Work breakdown structure |
| 1. To create a project time management plan to ensure timelines for key activities align with planning and approval activities for project. | Schedule Management Plan  Project Schedule Forecasts  Activity Lists  Activity Attributes  Milestone Lists |
| 1. To create a cost management plan to ensure that adequate budgets are assigned and sufficient cash flow is maintained throughout the life cycle. | Cost Management Plan  Cost forecasts |
| 1. To establish a project quality management plan for defining the minimum acceptable criteria for acceptance of deliverables | Quality Management Plan  Acceptance criteria  Project deliverables |
| 1. To develop the project human resource management plan for the assignment of work packages and associated resources for proper management of the project. | Resource Management Plan  Project Team Assignments  Resource Breakdown Structure |
| 1. To define the project risk management plan that identifies key risks and risk responses for risks directly related to the project and those that have sustainability implications. | Risk Management Plan  Risk Register |
| 1. To development a comprehensive communication management plan that clearly articulates the project communication strategies to be utilized at all levels of the project with internal and external stakeholders. | Communications Management Plan  Communication Matrix |
| 1. To create a comprehensive stakeholder management plan that identifies key stakeholders, their level of interest, and level of influence which may impact the project. | Stakeholder Management Plan  Stakeholder Register  Stakeholder Engagement Assessment Matrix  Stakeholder Analysis Chart |
| 1. To create a procurement management plan which articulates the methodology and strategies to be used for sustainable and transparent selection of suppliers for good and services under the project. | Procurement Management Plan  Procurement plan |
| 1. To create a sustainable developmentplan which articulates strategies to be used for incorporating sustainablity measures into the project management plan. | sustainable developmentplan |

# 4. RESULTS

Chapter 4 presents the findings and analysis of the respective deliverables of the final graduation project. This includes the project charter, integration management plan, scope management plan, time management plan, cost management plan, quality management plan, resource management plan, communication management plan, risk management plan, procurement management plan and stakeholder management plan.

# 4.1 Project Charter

Describe the activities and results associated to the fulfilment of this specific objective (might include graphs, charts, flow diagrams, methodologies, phases, templates, plans, etc).

**Chart 6: Project Charter**

|  |  |
| --- | --- |
| **PROJECT CHARTER**  **Formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries.** | |
| **Date** | **Project Name:** |
| June 3, 2024 | Project Management Plan for the Project – Belize’s Environmental Enforcement Economic Analysis |
| **Knowledge Areas / Processes** | **Applicacion Area (Sector / Activity)** |
| **Knowledge areas**: project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project risk management, project communication management, project stakeholder management, project procurement management  **Process groups:** initiation, project planning, project execution, monitoring and controlling, and project closing | Environment/Legal/Economic |
| **Start date** | **Finish date** |
| June 3, 2024 | December 2, 2024 |
| **Project Objectives (general and specific)** | |
| General objective: To assess Belize’s current environmental enforcement framework, mapping out the differences between how the system should work vs. how it works, analyze legislative gaps, and make recommendations for improving the regulatory framework for protected areas in Belize.  Specific objectives:   1. To conduct a comprehensive literature review of Belize’s environmental laws and regulations. As well as pertinent documents/studies relating to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalities. 2. To assess Belize’s legislative framework to determine conflicts or overlap of Belize’s environmental laws and regulations with respect to enforcement and penalities. 3. To conduct a gap analysis to identify whether the existing laws are clear and adequate, if any conflicts exist between laws, and what is the resulting impact. 4. To map the enforcement system. 5. To prepare a qualitative and quantitative data collection strategy and develop a database for recording quantitative data. 6. To co-create a strategic action plan for strengthening environmental enforcement in Belize. | |
| **Project purpose or justification (merit and expected results)** | |
| This project aims to assess Belize’s current environmental enforcement framework and develop a strategic action plan to improve environmental enforcement in Belize. This work will support the design of Belize’s Project Finance for Permanence which focuses on coastal and marine protected areas, their connected ecosystem and the communities dependent on the health and wellbeing of those natural resources. | |
| **Description of Product or Service to be generated by the Project – Project final deliverables** | |
| This project will provide the following deliverables:   1. Situational analysis report detailing baseline of Belize’s laws and regulations pertaining to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties. 2. Situational and gap analysis report which identifies recommendations for improvement to Belize’s environmental enforcement based on case studies, best practice publications etc. 3. Technical assessment report detailing the assessment of the legal framework efficiency and effectiveness, adequacy of existing laws, conflicts (if applicable) and the resulting impact. 4. Qualitative and quantitative data collection strategy which identifies the research and data collection methodology, listing of key stakeholders, data repositories to access, as well as timeline for execution of data collection activities. 5. Data synthesis report from data collection and analysis 6. Co-design and validation workshop report based on activities leading up to and concluded in the validation workshop for the development of the strategic action plan for strengthening Belize’s environmental enforcement. | |

|  |
| --- |
| **Assumptions** |
| The following assumptions have been made with respect to the criteria indicated below:   1. Reources: It is assumed there is availability of necessary technical expertise and data to support required analysis. 2. Resources: It is assumed that the Government of Belize and key government enforcement agencies, and key sectors support the project and will cooperate through the process. Furthermore, Various environmental enformcement agencies are willing to collaborate and align where necessary for the improvement of national environmental enforcement in Belize. 3. Resources: It is assumed that there will be unlimited access to relevant data and information required for assessments and analysis and that the project will receive the support and cooperation from key regulatory organizations and be willing to share information. 4. Resources: The budget and 6 month timeframe allocated for the project is sufficient for its successful completion. 5. Scope: The scope of this project will not change significantly. |
| **Constraints** |
| The following constraints have been made with respect to the criteria indicated below:   1. Time: The total time frame for the project will not exceed 6 months. 2. Cost: The budget will not exceed the allocated budget of USD $100,000. |
| **Preliminary risks** |
| 1. If the scheduled milestones are not adhered to, the project management plan may not be completed within the required six month time frame, and impede linked activities within the design of the Project Finance for Permanence Conservation Plan. 2. Stakeholder resistance (particularly to sharing enforcement data) could hinder the process. |
| **Budget** |
| The total estimate project cost is: $100,000 USD |
| **Milestones and dates** |
| |  |  |  | | --- | --- | --- | | Milestone | Start date | End date | | Project Start | June 3, 2024 | December 1, 2024 | | Literature Review | June 4, 2024 | June 28, 2024 | | Submission of Belize’s Interim situational analysis report | July 1, 2024 | July 12, 2024 | | Submission of Situational and Gap Analysis Final Report | July 15, 2024 | July 26, 2024 | | Enforcement mapping (detection to prosecution) | July 29, 2024 | August 2, 2024 | | Submission of technical assessment report on Belize’s legislative and regulatory framework | August 5, 2024 | August 16, 2024 | | Formulation of data collection strategy | August 19, 2024 | August 23, 2024 | | Quantitative and quantitative research and data collection | August 26, 2024 | October 4, 2024 | | Data analysis | September 23, 2024 | October 10, 2024 | | Submission of data synthesis report | October 11, 2024 | October 18, 2024 | | Co-design workshop | October 25, 2024 | October 25, 2024 | | Submission of workshop report | October 30, 2024 | November 6, 2024 | | Validation workshop | November 8, 2024 |  | | Submission of validation workshop report | November 11, 2024 | November 11, 2024 | | Submission of Strategic Action Plan | November 22, 2024 | November 22, 2024 | | Final Acceptance | November 25, 2024 | December 1, 2024 | | Project End | December 2, 2024 | December 2, 2024 | |  |  |  | |
| **Relevant Historic Information** |
| In November 2021, the Government of Belize entered agreement for a Blue Bond with the Nature Conservancy and signed a Memorandum of Understanding with the World Wildlife Fund for a Project Finance for Permanence (PFP) initiative. This bond and the PFP initiative will secure long term funding for marine protected areas in Belize. While the financial commitment is a positive move towards environmental conservation in Belize, enforcement of the existing environmental laws and regulations is still a challenge. Hence, the World Wildlife Fund is executing a project to analyze the enforcement of environmental laws in relation to marine and terrestrial protected areas in Belize. The project will also develop a strategy for the strengthening of enforcement of environmental laws in Belize. Through the efforts of the project, the enforcement climate and the economic implications will be analyzed and used to strengthen the governance and environmental enforcement frameworks for protected areas and marine ecosystems. |
| **Stakeholders** |
| **Direct Stakeholders**   1. Project Sponsor 2. Project Manager 3. Project Team Members: Technical advisors 4. Project Steering Committee 5. Environmental Enforcement Agencies (Government) 6. Other government enforcement agencies (Port Authority, Coast Guard, Police Department) 7. Enforcement Personnel (NGO Protected Area Co-Managers) 8. Members of the Judiciary (Magistrates, Lawyers, Prosecutors) 9. Consultants   **Indirect Stakeholders:**   1. Community members 2. Key sector representatives (tourism associations, fisher associations, fisher cooperatives) |

# 4.2. Plan Scope Management

Project scope management includes the work required and only the work required, to complete the project successfully. (PMI, 2017, p. 129). This includes six processes: plan project scope, collect requirements, define scope, create WBS, validate scope and control scope.



#### 4.2.1 Plan Scope Management

The plan scope management process for this project provides guidance on how to manage the scope throughout the project lifecycle. The scope management plan describes and documents how the scope will be defined, developed, monitored, controlled and validated.

The inputs for this process commence by analyzing information from several key documents. These are: the project charter which contains the high-level project description, assumptions, constraints and high-level requirements that the project will satisfy, the latest approved subsidiary plans of the project management plan, historical information contained in the organizational process assets (e.g. policies and procedures and historical information and lessons learned repositories) any other relevant enterprise environmental factors (e.g. organization’s culture, personnel administration and marketplace conditions).

Three tools and techniques used during the scope management process are: expert judgement, data analysis and meetings. Expert judgement is sought from individuals, groups and organizations with specialized knowledge and training in areas relating to the project’s thematic areas which include but are not limited to environmental enforcement such as the personnel from enforcement agencies, Belize’s legislative and regulatory framework such as members of the judiciary and prosecution teams. Appropriate data analysis techniques used would be determined based on the project and product scope, creation of the product, validation and control of the scope. Lastly, meetings are critical for any of the stakeholders with responsibility for any of the scope management processes. This would include the project manager, scope sponsor and project team members to develop the scope management plan, as well as selected stakeholders.

Lastly, the two outputs for the plan scope management are the scope management plan which describes how the scope will be defined, developed, monitored, controlled and validated, and the requirements management plan which describes how the project and product requirements will be analyzed, documented and managed.

#### 4.2.2. Collect Requirement

During the collect requirements process, one determines, documents and manages stakeholders needs and requirements to meet objectives. These requirements include all conditions or capabilities required in the product, service or result to satisfy the project contract agreement. The requirements become the foundation of the WBS. Furthermore, cost, schedule, quality planning and procurement are all based on these requirements.

For the Belize’s environmental enforcement analysis, inputs employed for the collect requirements process are drawn from the project charter which provide the high-level project description and high-level requirements to further develop the detailed requirements. Requirements are also drawn from project management plans such as the stakeholder engagement plan, and scope management plan; from project documents such as the assumptions logs, lessons learned register and stakeholder register, agreements, enterprise environmental factors and organizational process assets.

Several tools and techniques are utilized: expert judgement, data gathering through interviews, focus groups, and surveys, data analysis, decision making and interpersonal and team skills such as facilitation.

The main outputs of this process are the requirements documentation and the requirements traceability matrix. The chart below presents the traceability matrix for Belize’s environmental enforcement analysis.

**Chart 7: Requirements Traceability Matrix**

| **ID** | **Requirement Description** | **Goals/**  **Objective** | **Project**  **Objective** | **Verification** | **Priority** |
| --- | --- | --- | --- | --- | --- |
| REQ1 | Comprehensive literature review of Belize’s environmental laws and regulations (including legislative framework (international instruments, national legislation, jurisprudence) and regulatory enforcement framework (institutional structure and policies) | Situational analysis of Belize’s environmental enforcement | Compile baseline of Belize’s laws and regulations pertaining to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties | Review situational analysis report | High |
| REQ2 | Comprehensive review of relevant documents, case studies, analytical tool kits and publications on strategies for improving environmental economics | Situational and gap analysis for identification of recommendations for improvements to system or strategies for Belize | Identification of recommendations for improvement to Belize’s environmental enforcement | Review situational and gap analysis report | Medium |
| REQ3 | Technical assessment of Belize’s environmental enforcement legislative framework to assess effectiveness, efficiencies, conflicts and resulting impacts on environmental enforcement in Belize. | Identification of gaps, inefficiencies and recommendations for improvement of environmental enforcement in Belize | Identification of adequacy of existing laws and legislation, conflicts (if applicable) and the resulting impact. | Technical assessment report | High |
| REQ4 | Identification of informants/interviewees for qualitative and quantitative data collection and research to support data gathering and analysis phases. | Identification of key stakeholders and data required including key informants/interviewees and participants for focus groups, etc. | Development of a data collection strategy and timeline for execution of data collection activities | Qualitative and Quantitative Data Collection Strategy | High |
| REQ5 | Data collection for quantitative data collection and research to support data gathering and analysis phases. | Identification, collection and analysis of available data for quantitative analysis | Data analysis for the identification of existing roadblocks in the environmental enforcement chain | Data Synthesis Report | High |
| REQ6 | Workshop with national enforcement agencies and key government agencies | Co-design and validation of strategic action plan for environmental enforcement | improvement of national environmental enforcement in Belize | Validation workshop report | High |

Note: Own work

##### 4.2.3 Scope Management Roles and Responsibilities

The roles and responsibilities of the stakeholders for the project are defined in Chart 8 below. The chart below maps out the roles and responsibilities of the Sponsor, Project Manager, Steering Committee, Project team members, and other stakeholders.

**Chart 8: Scope Management Roles and Responsibilities**

| Role | Responsibilities |
| --- | --- |
| Sponsor(s) | * Provide guidance on the project’s strategic direction * Approve budget and resources * Approve project documents as required * Approve decisions on proposed scope changes as required |
| Project Manager | * Develop the scope management plan * Collect and document project requirements * Oversee scope validation and control * Single point of contact for project * Coordinate activities of consultants and project team * Provide feedback to Sponsor on approach, structure, priorities, and objectives * Provide recommendations to the Sponsor on the budget and resources required * Ensure the operations interests are represented on the project * Accountable for project progress * Approve project team documents as required * Make decisions on proposed changes within their level of authority * Authorize expenditures from contingency funds changes within their level of authority |
| Steering Committee | * Review and approve the scope management plan * Resolve scope related issues and conflicts |
| Consultant | * Maintains project product vision, goals, and objectives to ensure the vision is alignment * Coordinate activities of project team and other stakeholders * Make recommendations to Project Manager regarding the budget and resources required |
| Project Team Members | * Understand and adhere to the defined project scope and objectives. * Identify and report any scope-related issues or changes. * Participate in scope definition and validation. * Review and approve project deliverables and changes to scope. * Participate in scope definition and validation. * Contribute to the scope management process. |
| Other Stakeholders | * Provide clear and concise requirements * Provide feedback on approach, structure, priorities, objectives, and requirements * Approve project documents as required * Define and communicate their needs and expectations. * Participate in requirement validation and acceptance |

Note: Own work

**4.2.4 Define Scope**

A detailed description of the project and product(s) are developed in the define scope process. This includes a description of the product and acceptance criteria which makes clear what the project goals, objectives and stakeholder expectations.

The define scope process utilizes five inputs: project charter, project management plan, other project documents (such as the assumptions log, requirements documentation, and risk register), enterprise environmental factors and organizational process assets.

**Chart 9: Scope Statement**

| Project Scope Statement | | |
| --- | --- | --- |
| **Project Information** | | |
| **Project Phase:** | Initiation | |
| **Project Name:** | Belize’s Environmental Enforcement Analysis | |
| **Estimated Budget:** | USD $100,000 | |
| **Estimated Project Start:** | May 15, 2024 | |
| **Estimated Project End:** | November 15, 2024 | |
| **Scope Definition** | | |
| **Scope Description:** | The project will review and analyze Belize’s legislations and regulations regarding biodiversity protections, terrestrial and marine ecosystems and protected areas, and enforcement responsibilities to determine:   1. The clarity of the laws/regulations with respect to enforcement and penalties applied to environmental crimes. 2. Whether there are any conflicts or overlap between national level laws and site-specific laws, and if so, the resulting impact. 3. The adequacy and appropriateness of the existing laws and regulations, including the identification of gaps which should be addressed.   Based on the above findings, develop a strategic action plan for the strengthening of Belize’s environmental enforcement. | |
| **Project Deliverables:** | 1. Situational analysis report detailing baseline of Belize’s laws and regulations pertaining to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties. 2. Situational and gap analysis report which identifies recommendations for improvement to Belize’s environmental enforcement based on case studies, best practice publications etc. 3. Technical assessment report detailing the assessment of the legal framework efficiency and effectiveness, adequacy of existing laws, conflicts (if applicable) and the resulting impact. 4. Qualitative and quantitative data collection strategy which identifies the research and data collection methodology, listing of key stakeholders, data repositories to access, as well as timeline for execution of data collection activities. 5. Data synthesis report from data collection and analysis 6. Validation workshop report based on activities leading up to and concluded in the validation workshop for the development of the strategic action plan for strengthening Belize’s environmental enforcement. | |
| **Scope Exclusions:** | The project scope does not include protected areas outside of the geographic scope of Belize’s project finance for permanence. As such, only coastal terrestrial protected areas are included, all other forms of protected areas are excluded. Similarly, the project scope does not include any protected areas for which transboundary alliances exist. | |
| **Acceptance Criteria:** | 1. Completion of comprehensive literature review of Belize’s relevant environmental regulations and laws. 2. Completion of comprehensive situational analysis report detailing baseline of Belize’s laws and regulations pertaining to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties. 3. Comprehensive assessment report detailing the assessment of the legal framework efficiency and effectiveness, adequacy of existing laws, conflicts (if applicable) and the resulting impact. 4. Successful data collection and analysis with recommendations for systematic strategic improvements 5. Successful co-design workshop with relevant stakeholders. | |
| **Assumptions:** | 1. It is assumed there is availability of necessary technical expertise and data to support required analysis. 2. It is assumed that the Government of Belize and key government enforcement agencies, and key sectors support the project and will cooperate through the process. 3. It is assumed that there will be unlimited access to relevant data and information required for assessments and analysis. 4. It is assumed that the six-month time frame allotted to this project is sufficient to achieve the objectives. 5. It is assumed that the scope will not change significantly. | |
| **Constraints:** | 1. The budget will not exceed the allocated budget of USD $100,000. | |
| **Scope Statement Decision**  Approved  Approved with modifications  Rejected  Deferred | | |
| **Approval Date:** | | |
| **Project Manager:** | | Printed Name:  Signature: |
| **Project Sponsor** | | Printed Name:  Signature: |

Note: Own Work

**Create Work Breakdown Structure (WBS)**

This process utilizes the following four tools: project management plan (scope management plan), project documents (project scope statement, and requirements documentation), enterprise environmental factors, and organizational process assets. Expert judgement and decomposition are the tools and techniques used to create the following outputs – scope baseline and updates to project documents such as the assumptions log and requirements documentation.

**Work Breakdown Structure**

Figure 5 maps out the WBS for the project. This work will be carried out by an internal multi-specialist team within the World Wildlife Fund, along with selected consultants.

Figure 5: Work Breakdown Structure

A diagram of a company's organization chart

Description automatically generated

Note: own work

**Work Breakdown Structure (WBS) Dictionary**

The WBS dictionary is one of the three pillars which support project scope management and is created by the Project Manager in consultation with other team members to detail the tasks, activities and deliverables of the WBS. Definitions in the WBS are brief statements of work which add context to the WBS. The content includes whatever milestones are related, the project scope and in some instances dates, resources, cost and quantity. The chart below details a structured breakdown of the project objectives into tasks, each identified with a unique identifier and accompanying description of work.

**Chart 10: WBS Dictionary**

| **WBS Level** | **WBC Code** | **WBS Name** | **Description of Work** |
| --- | --- | --- | --- |
| 1 | 1 | Belize’s environmental enforcement analysis | Overall project objective/description |
| 2 | 1.1 | Belize situational analysis | Documentation of the assessment of the baseline of Belize’s legal and operational framework, identification of gaps against case studies and other comparable practices, and opportunities for improvement including possible impacts. |
|  | 1.1.1 | Literature Review – Belize laws and regulations | Situational analysis report detailing baseline of Belize’s laws and regulations pertaining to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties. |
|  | 1.1.2 | Literature review – related case studies, toolkits, etc. | Situational and gap analysis report which identifies recommendations for improvement to Belize’s environmental enforcement based on case studies, best practice publications etc. |
|  | 1.1.3 | Technical assessment of Belize’s environmental enforcement | Technical assessment report detailing the assessment of the legal framework efficiency and effectiveness, adequacy of existing laws, conflicts (if applicable) and the resulting impact. |
|  | 1.2 | Qualitative and Quantitative research | Qualitative and quantitative data collection strategy which identifies the research and data collection methodology, listing of key stakeholders, data repositories to access, as well as timeline for execution of data collection activities. |
|  | 1.2.1 | Qualitative data collection | Data collected via focus groups and key informant interviews. |
|  | 1.2.2 | Quantitative data collection | Data collected from enforcement data from enforcement agencies. |
|  | 1.2.3 | Data analysis | Data analysis utilizing enforcement economics toolkit and methodology |
|  | 1.2.4 | Data synthesis report | Data synthesis report from data collection and analysis |
|  | 1.3 | Development of strategic action plan | Development of strategic plan of action for improvement of Belize’s environmental enforcement based on collaboration through various national enforcement agencies. |
|  | 1.3.1 | Co-design and validation workshop | Co-design and validation workshop report based on activities leading up to and concluded in the validation workshop for the development of the strategic action plan for strengthening Belize’s environmental enforcement. |
|  | 1.3.2 | Publish workshop report | Documentation and dissemination of workshop goals, outcomes and agreements. |
|  | 1.4 | Project Management | All activities relating to planning, managing and controlling the project. |
|  | 1.4.1 | Project planning | All activities relating to the creation and updating of the relevant project management plans and related documents for achieving project goals. |
|  | 1.4.2 | Reports | Includes the generation, dissemination of reports to direct and indirect stakeholder relating to project status, assessments, financials, deliverables and other documentation for project performance. |
|  | 1.4.3 | Project closure | Completion and acceptance of all project activities and deliverables, updating of handover to relevant agencies and formal close of project. |

(Note: own work)

**4.2.5 Validate Scope**

1. The Project Steering Committee will review deliverables during the bi-monthly scheduled meetings to assess the completed deliverables against the pre-defined project objectives and requirements.
2. The Project Manager will:
   1. Coordinate activities of consultants and project team
   2. Oversee scope validation and control
   3. Collect and document project requirements
   4. Update the scope documentation to reflect any changes or clarifications made during the validation process, ensuring alignment with the final project deliverables.
   5. Provide feedback to Sponsor on approach, structure, priorities, and objectives
   6. Provide recommendations to the Sponsor on the budget and resources required
   7. Approve project team documents as required
   8. Obtain formal acceptance sign-off will be obtained from the Project Sponsor and key stakeholders indicating satisfaction with the delivered services and their alignment with the project's scope.

**4.2.6 Control Scope**

Control scope is performed throughout the project. It inputs include several project management plans, various project documents, work performance data and organizational process assets.

The Project Manager and project team will continuously monitor through weekly updates to ensure that the project timeline is on track based on the work breakdown structure. The project steering committee will resolve scope related issues and conflicts. Should changes to scope be required, the Project Manager will prepare the appropriate documentation for approval by the Project Sponsor and communicate with any other relevant stakeholders wherever necessary.

The project manager and team will monitor the project progress to identify and address scope creep, following appropriate channels to ensure that any changes to project scope are adequately evaluated and properly approved. Any required changes will be addressed through a Change Request Process which is described in the Perform Integrated Change Control Process, utilizing the forms shown in section 4.3.6. The approved changes will be documented and implemented via the change log as shown in Chart 12. All relevant documents will be updated to reflect approved change in scope. These include but are not limited to the: scope management plan, scope statement, and the work breakdown structure.

# 4.3. Integration Management Plan

Project integration management is a process that assembles every element of a project into a cohesive plan. It includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups. (PMI, 2017, p. 69). The seven steps of project integration management are: create project charter, develop project management plan, direct and manage project work, manage project knowledge, monitor and control project work, perform integrated change control and close out the project. These actions are applied from the start of the project all the way to completion and include unification, consolidation, communication, and interrelationship. In summary, Project Managers use project integration management to ensure that:

* Processes and tasks are organized and listed out
* Responsibilities are allocated to team members
* Shared resources and their overlapping schedules are managed
* And the team’s work efficiency is maximized.

In this way, the Project Manager can better manage and track the diverse elements of project to achieve the desired quality, thereby appeasing all key stakeholders. Since several of aspects of integration management are discussed in detail in other sections, the focus here shall be on how project managers manage and integrate changes throughout the project life cycle.

**4.3.1 Develop Project Charter**

The develop project charter process involves creating a document (project charter) that officially authorizes a project and grants the project manager the authority to use organizational resources for its execution. Key benefits include aligning the project with the organization's strategic goals, establishing a formal project record, and demonstrating organizational commitment to the project. For this project, this process was only performed once at the start of the project. The project charter can be found in Appendix 1.

Developing a project charter involves several tools and techniques to ensure it is comprehensive, clear, and aligned with the project's strategic direction. These include but are not limited to:

1. **Expert judgement**, usually project managers, stakeholders or subject matter experts. These persons provide insights on project goals, scope, deliverables, risks, and potential challenges, helping to craft a well-defined charter.
2. **Data Gathering** Techniques such as interviews, focus groups, surveys or questionnaires. Interview are generally conducted on a one on one basis with key stakeholders to understand their needs, expectations, and concerns. Focus groups engage small groups of stakeholders to discuss project objectives, requirements, and constraints. Surveys and questionnaires collect inputs from a larger group of stakeholders to gather diverse perspectives on the project scope and goals.
3. **Facilitation techniques** may include several techniques such as workshops, brainstorming and mind mapping. Workshops are structured sessions with stakeholders to collaboratively define project goals, scope and deliverables. The brainstorming technique generate ideas or identify risks, constraints, and assumptions during group discussions. Mind mapping organizes ideas visually to understand the relationships and interdependencies between project elements.

The develop project charter process results in several key outputs that are critical for authorizing and guiding the project. These outputs are the project charter and the assumptions log which are essential for ensuring that the project has clear objectives, scope, and governance. The project charter usually includes the: project purpose/justification, high level project description, project objectives, high level requirements, assumptions and constraints, high level risks, summary milestone schedule, budget summary, project approval requirements, key stakeholders, and project manager and authority. The assumptions log captures assumptions and constraints that could affect the project outcome. This document ensures that the assumptions and constraints identified during the development of the charter are considered during the execution phase.

**4.3.2 Develop Project Management Plan**

The Develop Project Management Plan process is crucial for ensuring that all elements of the project are well-coordinated and align with the project’s goals. This process is the key phase in project planning where all of the project’s subsidiary plans, processes, and baselines are integrated into a comprehensive cohesive plan that guides project execution. It is an ongoing process, and the project management plan is updated as needed throughout the project lifecycle. This plan defines how the project will be executed, monitored, controlled, and closed. It consolidates all relevant information to ensure alignment with the project’s goals and objectives and provides a roadmap for the entire project lifecycle. It has four inputs:

1. Project charter which provides the high-level project information, objectives, and authorization for project planning;
2. Outputs from other planning processes such as the outputs from processes like scope planning, schedule planning, cost planning, and risk planning feed into the project management plan;
3. Enterprise Environmental Factors which are the external factors such as organizational culture, regulations, market conditions, and technology may influence the project, and
4. Organizational Process Assets which are the existing policies, templates, and lessons learned that can guide project planning and execution.

This process uses several different types of tools and techniques such as:

1. Expert Judgment which solicit input from experienced project managers and subject matter experts to help develop the plan.
2. Data Gathering techniques such as interviews, focus groups, or surveys to gather insights from stakeholders.
3. Interpersonal and team skills which use collaborative techniques like facilitation and conflict resolution to bring together various perspectives from stakeholders.
4. Meetings such as stakeholder meetings and workshops which are often held to define the project management plan's components and ensure alignment.

The output of this process are the project management plans. The plans serves as a comprehensive guide for project execution and sets the stage for managing scope, schedule, costs, quality, risks, and stakeholder expectations throughout the project lifecycle. The process ensures that project activities are properly integrated and that changes are managed effectively.

**4.3.3 Direct and Manage Project Work**

Through the Direct and Manage Project Work process, the project manager will lead the project team, make decisions, solve problems and ensure that the project execution follows the project management plan to deliver the project’s objectives while efficiently managing all activities to ensure the project outputs are achieved. The five key inputs are:

1. Project Management Plan: The baseline and subsidiary plans guide project execution.
2. Project Documents including logs, registers, and schedules.
3. Approved Change Requests, which are the modifications, authorized to be implemented.
4. Enterprise Environmental Factors which include the internal or external conditions affecting execution.
5. Organizational Process Assets which include the policies, procedures, and historical information.

The main tools and techniques used are:

1. Expert Judgment using key experts to guide decision-making and solve problems.
2. Project Management Information Systems (PMIS) utilizing various tools for tracking and managing project data, schedules, and resources.
3. Meetings such as regular team and stakeholder meetings to discuss progress and resolve issues.
4. Change Control Tools which systematizes the handling and documentation of changes.

The outputs for this process include: deliverables, work performance data, issue log, change requests, project management plan updates, project document updates and organizational process assets updates.

**4.3.4 Manage Project Knowledge**

The Manage Project Knowledge process is part of Project Integration Management and falls within the Executing process group. Its goal is to ensure that valuable project knowledge is captured, shared, and utilized effectively to improve project performance and contribute to organizational learning which can be used to enhance decision-making and improve future projects. It ensures that valuable insights are not lost and are made accessible to those who can benefit from them. Inputs are drawn from the: project management plan, project documents, deliverables, enterprise environmental factors and organizational process assets.

Key activities include:

* Knowledge Sharing: Facilitate the flow of information between team members, stakeholders, and other relevant parties to ensure that valuable knowledge is shared and used effectively.
* Documenting Lessons Learned: Capture both positive and negative experiences throughout the project to improve future decision-making. This includes documenting challenges faced and how they were overcome.
* Applying Existing Knowledge: Use historical data, templates, and prior project experience to avoid reinventing the wheel and reduce risks.
* Creating New Knowledge: Develop new insights, practices, and solutions as the project progresses, especially when unforeseen issues arise.
* Managing Knowledge Resources: Ensure that tools, methodologies, and systems are in place to manage and store project knowledge for easy access by the team and organization.

The main tools and techniques used are:

1. Knowledge Management Systems which are systems and software tools used to store and share knowledge across the organization or project team.
2. Expert Judgment by seeking and utilizing input from subject matter experts and experienced stakeholders to guide knowledge management efforts.
3. Knowledge Sharing Platforms which are collaborative tools like intranets, wikis, and document-sharing platforms that facilitate the exchange of ideas and best practices.
4. Meetings and Discussions which include regular team meetings, workshops, or retrospectives where knowledge and lessons learned are shared.

The main outputs are:

1. Lessons learned register which can be used for improved decision-making by leveraging lessons learned and existing knowledge.
2. Project management plan updates
3. Organizational process assets updates which include the creation of a knowledge base that contributes to the organization’s knowledge repository.

**4.3.5 Monitor and Control Project Work**

The Monitor and Control Project Work process focuses on tracking project performance, identifying variances from the plan, and implementing actions to keep the project on track. It's an ongoing process throughout the project lifecycle that helps ensure the project is completed successfully and any issues are addressed promptly. This process is part of the monitoring and controlling process group. It involves monitoring both the project performance and the project environment to identify issues, risks, and changes that could affect the project's success.

The inputs to the Monitor and Control Project Work process include a combination of: the project management plan for baseline data, project documents like issue logs, risk registers, and lessons learned, work performance data (e.g., actual costs, schedule, and progress), enterprise environmental factors (e.g., regulations, market conditions), organizational process assets (e.g., templates, historical data), and approved change requests that have been integrated into the project. Together, these inputs provide a comprehensive view of the project’s current status and enable project managers to identify issues, assess performance, and take corrective or preventive actions to keep the project on track.

This process uses the following tools and techniques:

1. Expert Judgment: Expertise to help interpret performance data, recommend corrective actions, or assess potential impacts of changes.
2. Data Analysis which utilizes techniques such as variance analysis, trend analysis, and root cause analysis to understand performance and identify problems.
3. Decision Making
4. Meetings which include regular team and stakeholder meetings to discuss progress, issues, and make decisions.

The outputs for this process are work performance reports, change requests, project management plan updates and project documents updates.

**4.3.6 Perform Integrated Change Control Process**

The perform integrated change control process is the process of reviewing all change requests; approving changes and managing changes to deliverables, project documents, and the project management plan, and communicating the decisions (PMI, 2017, p.113). Such change requests may include but not be limited to budget, schedule, resources etc. During this process, the impact of the proposed changes must be evaluated.

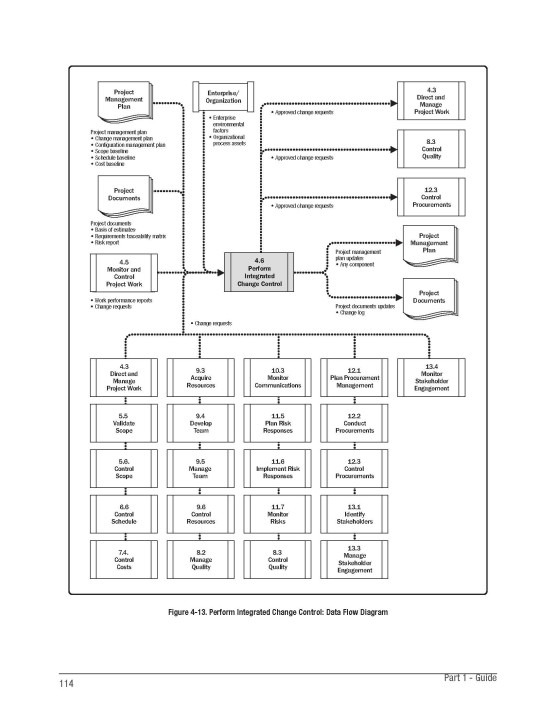


Figure 6: Reprinted from A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Sixth Edition. Project Management Institute (PMI), 2017 Figure 4-13, p. 114 Copyright 2017 by Project Management Institute, Inc.

Tools and techniques used for this process include:

1. Expert Judgment which utilizes expertise from subject matter experts or key stakeholders is used to evaluate the potential impacts of changes and make informed decisions.
2. Change control tools which should include a set of procedures used to manage change requests, including tools and templates to capture, evaluate, and approve or reject changes.
3. Data analysis for evaluating the change requests and its implications
4. Decision making techniques such as methods like voting, multi-criteria decision analysis, or cost-benefit analysis can be used to evaluate and make decisions on changes.
5. Meetings with stakeholders or decision-makers responsible for reviewing and approving or rejecting changes.

The outputs of this process are:

1. Approved Change Requests which include the formal approval for changes that will be incorporated into the project, including any adjustments to scope, schedule, or cost.
2. Project Management Plan Updates which include changes that are reflected in the project management plan, such as updates to the scope baseline, schedule baseline, cost baseline, or other subsidiary plans.
3. Project Document Updates which are changes that are incorporated into various project documents (e.g., risk register, issue log, communication plan, etc.) to reflect the latest project status.
4. Change Log which is a record of all change requests, including their status (approved, rejected, deferred), reasons for decisions, and any impacts or actions taken.

Sample forms used by the project to request changes are shown below.

**Chart 11: Change Request Form**

|  |  |  |  |
| --- | --- | --- | --- |
| **Change Request Form** | | | |
| **Project Name** | [insert project name] | **Requested by** | [insert name and position of person requesting change] |
| **Date of Request** | [day/month/year] | **Change Number** | [change number reference] |
| **Description of Change** | | | |
| [insert description of change being requested] | | | |
|
| **Impact of Change:** | | | |
| |  |  |  | | --- | --- | --- | | Cost | Resource | Scope | | Quality | Schedule | Project Status | | | | |
| **Reason for Change Request** | | | |
| [justification for change request] | | | |
|
| **Expected Effect on Deliverables** | | | |
| [description of impact on deliverables] | | | |
|
| **Expected Effect on the Timeline** | | | |
| [description of impact on project schedule/timeline, if applicable] | | | |
|
| **Expected Cost of Change** | | | |
| **Original Budget** | | | |
| **Revised Budget** | | | |
| **Funds Available** |  | **Source of Funds** |  |
| **Status:** | | | |
| **Received On** | [change request date] | **Approved by** | [name, position of approver] |
| **Approved (Yes / No)** |  | **Approved on** | [day/month/year] |

Note: Own Work

**Chart 12: Change Log**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Change Log** | | | | | | |
| **Project Name** |  | | | **Updated On:** |  | |
| **Version No.** |  | | | **Review Date:** |  | |
|  | | | | | | |
| **Change No.** | **Change Request** | **Requested By:** | **Date of Request** | **Impact**  **(High/Med./Low)** | **Status** | **Comments** |
| **1** |  |  |  | **High** | **In Process** |  |
| **2** |  |  |  | **Medium** | **Approved** |  |
| **3** |  |  |  | **Low** | **Denied** |  |
| **4** |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |
| **6** |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |

Note: own work

**4.3.7 Project Closure**

The project is closed once all the work of the project has been completed, and all deliverables are accepted. At this stage the project manager and team carry out a formal review of the entire project. This will define the project’s successes, challenges/failures, and lessons learned which will be documented and used to improve future projects and opportunities. This process utilized the following inputs:

1. Project charter to verify the original project objectives and authorization
2. Project management plan to ensure that all elements of the plan have been executed and documented.
3. Project documents such as the issue log, risk register, and lessons learned register.
4. Accepted deliverables which are the confirmed, completed outputs ready for handover or transition.
5. Business documents like the business case and benefits management plan to assess project outcomes.
6. Agreements to ensure that all contract obligations have been met and closed.
7. Procurement documentation to close any outstanding procurement contracts and verify deliverables.
8. Organizational process assets for capturing lessons learned and following best practices in closing.

This process uses the following tools and techniques:

1. Expert Judgment include utilizing key experts to assess the success of the project, evaluate deliverables, and review lessons learned.
2. Data analysis
3. Meetings include final meetings with stakeholders to get formal acceptance, review deliverables, and gather lessons learned.

Actions and activities which the team will carry out include:

* Finalizing Deliverables - Ensuring that all documents and deliverables are up-to-date and any outstanding issues were successfully resolved. If there are deliverables which will be shared with external stakeholders, the Project Manager should ensure that these are done. For this project, the Project Manager will ensure that the final reports arising from the co-design workshop and previous analysis done will be shared with key government enforcement agencies.
* Obtaining formal acceptance - Ensuring that all consultants have received formal acceptance of deliverables. In the case of vendors providing goods, formal confirmation that all goods have been received and accepted.
* Closing Contracts - Ensure that all costs have been paid out and properly charged. This includes ensuring that all vendor/consultant payments have been completed, and that the finance department has received copies of receipts as proof of having received such payments.
* Releasing resources - Staff and other resources that were assigned to this project will be reassigned. This includes documentation of all assets such as laptops, printers etc. which were purchased for the project.
* Conducting post-project review - An external audit and end of project assessment will be conducted of the project and the final reports submitted to project sponsors.
* Updating organizational process assets - Documentation such as lessons learned, registers, stakeholder etc. will form part of the organization’s knowledge management and archived to inform future projects. Chart 13 provides a template for documenting lessons learned in the project. Typically, the lessons learned documents what worked well and what didn’t work well, recommendations for what could be done differently, what surprised the team encountered. By documenting these lessons, the project teams can discover root causes to problems that may have occurred, thereby avoiding them in future projects. Documenting lessons learned is a part of the project’s continuous learning process.
* Archiving project documents – Ensuring that all project documents are organized and properly filed for future reference, audits and legal requirements. This includes plans, reports, correspondence, etc.

**Chart 13: Lessons Learned Document (Note: own work)**

**Lessons Learned Register**

|  |  |  |
| --- | --- | --- |
| **Project Name:** | **Prepared By:** | **Date:** |
| **Project Manager:** | **Project Type:** | **Project Sponsor:** |

**PROJECT HIGHLIGHTS:**

|  |  |
| --- | --- |
| **Project Success** | **Factors that supported success** |
|  |  |
|  |  |
|  |  |

**SUMMARY OF LESSON LEARNED**

|  |
| --- |
| **Project Background:** |
|  |
| **Summary of Lessons Learned** |
|  |
| **Overall Recommendations** |
|  |

**TECHNICAL PERFORMANCE**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**SCHEDULE PERFORMANCE**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**COST PERFORMANCE**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**RISK MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**TEAM MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**STAKEHOLDER MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**COMMUNICATION MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**Approvals:**

Prepared By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Manager

Approved By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Sponsor

# 4.4. Schedule Management Plan

Project schedule management processes are the steps required to plan, execute and control the time/schedule aspects of the project.

**4.4.1 Plan Schedule Management**

Plan schedule management is the process of creating a plan for how to manage the schedule. This includes establishing the policies, procedures, and documentation for planning, developing, managing, executing and controlling the project schedule (PMI, 2017, p.179). Drawing from the project charter, project management plans, enterprise environmental factors and organizational process assets, the Project Manager will identify inputs. Using expert judgment and meetings as tools to develop the output which is the schedule management plan. The Project Manager will use Microsoft Project software to develop and manage the project schedule. This powerful software allows for the creation of a logical work breakdown structure, defining task relationships, setting baselines where appropriate, and tracking status to date by updating the percentage complete. It also includes feature such as Gantt charts, resource management. budget management and time tracking.

**4.4.2 Define Activities**

Define activities is the process of identifying the scope and tasks of the project. Here work packages are decomposed into scheduled activities that provide the basis for estimating, scheduling, executing, monitoring and controlling the work project. This process has similar inputs as the plan schedule management process. The outputs include the activity list, activity attributes, and milestones list. Where appropriate these processes would also include updates to the project management documents and change requests. The table below highlights the project’s key milestones.

**Chart 14: Project Milestones**

| Milestone Name | Estimated End Date |
| --- | --- |
| Project Start | June 3, 2024 |
| Belize’s interim situational analysis completed | July 12, 2024 |
| Situational and Gap Analysis Final report completed | July 26, 2024 |
| Enforcement mapping | August 2, 2024 |
| Technical Assessment Report completed | August 16, 2024 |
| Data collection strategy completed | August 23, 2024 |
| Data synthesis report completed | October 18, 2024 |
| Co-Design workshop report completed | November 11, 2024 |
| Strategic Action Plan completed | November 22, 2024 |
| Project End | December 2, 2024 |

Note: own work

**Chart 15: Schedule Management Roles and Responsibilities**

|  |  |
| --- | --- |
| **Role** | **Description** |
| Project Manager | The project manager is responsible for overall project management, acts as a leader, coordinator, and decision-maker throughout the project, managing resources, risks, and stakeholder expectations. He/She will work with the project team to review and update the schedule as necessary for the duration of the project. He/She also participate in identifying, defining, evaluating, verifying, communicating and executing schedule changes. |
| Local Environmental Enforcement Consultant | Is part of the local (temporary) WWF (Belize) team supporting the project. This person leads on the development of the project’s technical deliverables including data gathering and analysis. |
| WWFUS Environmental Enforcement Specialist | Is part of the external WWF team supporting the project. Provide support for the technical contract supervision of the local environmental enforcement consultant. They review project outputs/milestones (technical reports), participate in team meetings |
| WWFUS Legal Counsel | This person provides legal expertise and guidance to ensure that projects comply with relevant laws, regulations, and internal policies. They work closely with WWF project managers, teams, and stakeholders to mitigate legal risks and help achieve WWF’s conservation goals while safeguarding its operations. |
| Finance and Administrative Officer | Is a part of the local WWF (Belize) project team and helps to provide day to day operational support. Is responsible for assisting with sourcing suppliers, quotations, and ensuring timely payments, and preparation and filing of appropriate documentation to support project and office activities. These include payments for consultants, and costs associated with meetings and events held by the project as part of its scope of work. |
| WWF Contracts Officer | Is a part of the local WWF Mesoamerica project team. Though based in Guatemala, is responsible for the creation of all WWF contract agreements and amendments (if required), including overseeing the contracts, ensuring that agreements with vendors, suppliers, and clients are properly executed and compliant with regulations. |

Note: own work

**4.4.3 Sequence Activities**

The sequence activities processes determine the order and dependencies of tasks. This allows the project team to determine the path for obtaining the greatest efficiency given all the project constraints. In Microsoft Project, the Project Manager will decompose the work packages into their respective tasks, include any dependencies, leads and lags. The outputs produced include the project schedule network diagrams which is a visual representation of the sequential and logical relationships between the various project tasks. It captures the order in which the activities should be scheduled to address their logical relationships. The diagram shows activities as nodes and arrows to indicate the sequence and interdependencies of the connected activities. Other outputs of this process include updated project documents such as the activities list, assumptions log and milestone list.

**Chart 16: Activity List**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WBS ID** | **Work Package** | **Task No.** | **Activity Name** | **Description** |
| **2.1** | **Belize Situational Analysis** | 2.1.1 | Literature review | This activity includes a comprehensive literature review of Belize’s environmental laws and regulations. As well as pertinent documents/studies relating to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties. |
| 2.1.2 | Submission of Belize's interim situational analysis | This activity analysis Belize’s legislative framework to determine conflicts or overlap of Belize’s environmental laws and regulations with respect to enforcement and penalties. The final output is a report on the findings. |
| 2.1.3 | Submission of Situational analysis and gap analysis final report | This activity takes into account the previous findings from the situational analysis and does a gap analysis to identify whether the existing laws are clear and adequate, if any conflicts exist between laws, and what is the resulting impact. The final output is a report on the findings. |
| 2.1.4 | Enforcement mapping (detection to prosecution) | This activity includes mapping all organizations (government and NGO) which are involved in environmental enforcement within the coastal and marine environment in Belize and maps their relationship to each other from detection to prosecution. The final report is a chart with short report. |
| 2.15 | Submission of technical assessment report on Belize’s legislative and regulatory framework | This activity takes into account the previous findings from the situational analysis, gap analysis and enforcement mapping and provides the basis for the qualitative and quantitative research to be done. The final output is a report on the findings. |
| **2.2** | **Qualitative and Quantitative Research** | 2.2.1 | Formulation of data collection strategy | This activity documents the methodologies to be used for data collection and includes clear objectives for the data collection, and how data will be used throughout the project, types of data to be collected, data collection methods, sampling strategy, data quality assurance, data management, data analysis methods and handling/ownership of data. |
| 2.2.2 | Data analysis | This activity is the process of systematically examining and interpreting data to extract meaningful insights, identify patterns, and make decisions based on the information collected. |
| 2.2.3 | Submission of data analysis synthesis report | This activity is the report created based on the data analysis. |
| **2.3** | **Development of Strategic Action Plan** | 2.3.1 | Co-design and validation workshop | This activity includes the |
| 2.3.2 | Submission of workshop report | This activity is the report created based on the outcomes of the workshop. |
| 2.3.3 | validation workshop |  |
| 2.3.4 | Validation Workshop Report | This activity is the report created based on the outcomes of the workshop. |
| 2.3.5 | Submission of strategic action plan | This activity integrates the workshop results with the previous reports created to develop a strategic plan. |
| 2.3.6 | Publication of report | This activity includes the physical printing of the strategic plan and annex reports as well as online publication on WWF and key stakeholder partners websites. |
| **2.4** | **Project Management** | 2.4.1 | project planning | This activity includes all the activities throughout the project relating to the integrated management of the project. |
| 2.4.2 | Acceptance of report 1 | This activity includes the review and acceptance of the report 1 (Belize's interim situational analysis) from the consultant. Its acceptance precedes and authorizes the consultant payment for this deliverable. |
| 2.4.3 | Acceptance of report 2 | This activity includes the review and acceptance of the report 2 (gap analysis) from the consultant. Its acceptance precedes and authorizes the consultant payment for this deliverable. |
| 2.4.4 | Acceptance of report 3 | This activity includes the review and acceptance of the report 3 (technical assessment report on Belize’s legislative and regulatory framework) from the consultant. Its acceptance precedes and authorizes the consultant payment for this deliverable. |
| 2.4.5 | Acceptance of report 4 | This activity includes the review and acceptance of the report 4 (data analysis synthesis report) from the consultant. Its acceptance precedes and authorizes the consultant payment for this deliverable. |
| 2.4.6 | Acceptance of report 5 | This activity includes the review and acceptance of the report 5 (Co-Design report) from the consultant. Its acceptance precedes and authorizes the consultant payment for this deliverable. |
| 2.4.7 | Acceptance of report 6 | This activity includes the review and acceptance of the report 6 (Validation Workshop Report) from the consultant. Its acceptance precedes and authorizes the consultant payment for this deliverable. |
| **2.5** | **Project Closure** | 2.5.1 | project evaluation | This activity is conducted by an external consultant to assess the project’s overall performance, impact, and effectiveness. |
| 2.5.2 | project audit | This activity is conducted by an external audit firm to assess the project’s financial compliance with standards, regulations, and best practices |
| 2.5.3 | project closure | This activity is the formal closing of the project including sharing of deliverables with relevant stakeholders/partners, seeking sponsor approval, documenting learnings, recognizing team and stakeholder contributions, closing out of files, reassigning staff, etc. |

**4.4.4 Estimate Activity Durations**

The estimate activity durations process estimates the number of work periods needed to complete individual activities with estimated resources. This project mainly uses analogous estimation utilizing data from previous projects similar in nature. The table below provides the activity list diagram developed in Microsoft Project for this project.

**Chart 17: Project Activity List**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WBS** | **Task Name** | **Duration** | **Start** | **Finish** | **Predecessors** |
| 0 | Belize's EEA | 131 days | Mon 03/06/24 | Mon 02/12/24 |  |
| 1 | Belize's Environmental Enforcement Analysis |  |  |  |  |
| 2 | Project Start | 131 days | Mon 03/06/24 | Mon 02/12/24 |  |
| 2.1 | 1.1 Belize Situational Analysis | 54 days | Tue 04/06/24 | Fri 16/08/24 |  |
| 2.1.1 | Literature review | 19 days | Tue 04/06/24 | Fri 28/06/24 |  |
| 2.1.2 | Submission of Belize's interim situational analysis | 10 days | Mon 01/07/24 | Fri 12/07/24 | 4 |
| 2.1.3 | Submission of Situational analysis and gap analysis final report | 10 days | Mon 15/07/24 | Fri 26/07/24 | 5 |
| 2.1.4 | Enforcement mapping (detection to prosecution) | 26 days | Sat 29/06/24 | Fri 02/08/24 | 4 |
| 2.1.5 | Submission of technical assessment report on Belize’s legislative and regulatory framework | 10 days | Mon 05/08/24 | Fri 16/08/24 | 7 |
| 2.2 | 1.2 Qualitative and Quantitative Research | 45 days | Mon 19/08/24 | Fri 18/10/24 |  |
| 2.2.1 | Formulation of data collection strategy | 5 days | Mon 19/08/24 | Fri 23/08/24 | 7 |
| 2.2.2 | Data analysis | 35 days | Fri 23/08/24 | Thu 10/10/24 | 10 |
| 2.2.3 | Submission of data analysis synthesis report | 6 days | Fri 11/10/24 | Fri 18/10/24 | 11 |
| 2.3 | 1.3 Development of Strategic Action Plan | 22 days | Fri 25/10/24 | Mon 25/11/24 |  |
| 2.3.1 | Co-design and validation workshop | 1 day | Fri 25/10/24 | Fri 25/10/24 | 12 |
| 2.3.2 | Submission of workshop report | 6 days | Wed 30/10/24 | Wed 06/11/24 | 14 |
| 2.3.3 | validation workshop | 1 day | Fri 08/11/24 | Fri 08/11/24 | 15 |
| 2.3.4 | Validation Workshop Report | 1 day | Mon 11/11/24 | Mon 11/11/24 | 16 |
| 2.3.5 | Submission of strategic action plan | 1 day | Fri 22/11/24 | Fri 22/11/24 | 14,16 |
| 2.3.6 | publication of report | 1 day | Mon 25/11/24 | Mon 25/11/24 | 18 |
| 2.4 | 1.4 Project Management | 131 days | Mon 03/06/24 | Mon 02/12/24 |  |
| 2.4.1 | project planning | 131 days | Mon 03/06/24 | Mon 02/12/24 |  |
| 2.4.2 | Acceptance of report 1 | 5 days | Sat 13/07/24 | Thu 18/07/24 | 5 |
| 2.4.3 | Acceptance of report 2 | 5 days | Sat 27/07/24 | Thu 01/08/24 | 6 |
| 2.4.4 | Acceptance of report 3 | 5 days | Sat 17/08/24 | Thu 22/08/24 | 8 |
| 2.4.5 | Acceptance of report 4 | 5 days | Sat 19/10/24 | Thu 24/10/24 | 12 |
| 2.4.6 | Acceptance of report 5 | 5 days | Fri 08/11/24 | Thu 14/11/24 | 15 |
| 2.4.7 | Acceptance of report 6 | 4 days | Tue 12/11/24 | Fri 15/11/24 | 18 |
| 2.5 | Project Closure | 22 days | Fri 01/11/24 | Mon 02/12/24 |  |
| 2.5.1 | project evaluation | 5 days | Fri 01/11/24 | Thu 07/11/24 |  |
| 2.5.2 | project audit | 5 days | Mon 25/11/24 | Fri 29/11/24 |  |
| 2.5.3 | project closure | 1 day | Mon 02/12/24 | Mon 02/12/24 | 29,30 |

**4.4.5 Develop Schedule**

Develop schedule is the process of analysing activity sequences, durations, resource requirements and schedule constraints to create a schedule model for project execution and monitoring and controlling (PMI, 2017, p. 205). This process produces the schedule baseline, project schedule and schedule data, project calendar. The diagram below shows the project schedule and critical path developed using Microsoft Project.

**Chart 18: Project Schedule and Critical Path**

A screenshot of a computer

Description automatically generated

Note: own work

**4.4.6 Control Schedule**

Control schedule is the process of monitoring the status of the project to update the project schedule and managing changes to the schedule baseline (PMI, 2017 p. 222). As the project advances, the Project manager will monitor the work performance of various activities and update the progress using Microsoft Project software. This software can also be used for schedule forecasts, and integrating approved change requests (scope, budget, resources, etc.).

The project manager should pay attention to the following which could be potential causes of schedule slippages:

* Project activities require more effort that planned
* Project staff require additional training or experience to meet the estimates
* Additional activities beyond those planned are required
* Specific technical skills were assumed in the plan that were not available
* The review and approval of deliverables took longer than planned.

To help curb these problems if they arise, the Project Manager should:

* Do weekly reviews which include assessing:

1. activity statuses and their estimates to complete work packages
2. adequacy of resources (human resources, budget, etc.)
3. unplanned requirements
4. consultant performance
5. engagement of external stakeholders, particularly those relating to data collection to ensure compliance with timelines, etc.
6. review of scope, approved or otherwise. Any changes to scope would be addressed under the scope management plan.

* Resolution of Schedule Problems involves:

1. Identifying the root cause of any delays and/or bottlenecks, or whether there needs to be any changes to the scope.
2. Reassess project priorities which could result in reprioritizing tasks or negotiating trade offs such as adjusting the scope or postponing non-critical activities to free up resources for critical tasks.
3. Optimizing resources which could include allocating additional resources.
4. Adjusting the schedule either by crashing the schedule which involves shorten the duration of certain tasks by increasing resources or working overtime (at the cost of higher expenses) or fast tracking the project by overlapping tasks that were originally planned to be sequential (without compromising quality).
5. Improve communication and collaboration with both the team and stakeholders. This is particularly critical for this project, as all the data has to be sourced from external organizations. Gaining their compliance with deadlines will be critical to keeping with project timelines, and the overall success of the project.
6. The project manager also has to manage expectations to ensure that realistic timelines are developed and ensure that the process is transparent to stakeholders. When delays are unavoidable, the Project Manager should negotiate new realistic timelines with stakeholders, keeping in mind project constraints.
7. Documenting the lessons learned and preventative measures taken which will critical to improving future projects execution.

# 4.5 Cost Management Plan

Cost management in project management involves the processes required to plan, estimate, budget, and control costs so that a project can be completed within its approved budget. Effective cost management helps ensure that the project stays financially viable and achieves its objectives without overspending. This section will articulate how the project plans costs, identify the factors which will tend to adjust the cost, describe the procedures for identifying changes to cost, cost changing mechanisms and responsibilities, and reporting requirements and tools for cost performance measurement.

**4.5.1 Plan Cost Management**

The plan cost management process sets the foundation for controlling costs throughout the project lifecycle, ensuring that the project stays within budget and meets its financial objectives. Inputs for this process are drawn from:

1. The project charter which provides the overall project budget and constraints,
2. project management plan (scope and schedule),
3. EEFs including external factors such as market conditions, organizational policies, regulations, and historical data from similar projects. These factors may influence cost estimating methods, budgeting approaches, and reporting requirements.
4. OPAs which include WWF’s existing guidelines, templates, cost management policies, historical information from previous projects, and lessons learned. These assets can provide valuable insights into cost management approaches, past cost estimates, and performance data that can aid in planning.

Tools and techniques used include meetings, expert judgement, and data analysis. During this process, the team would have to establish the baseline with the estimated project budget for against which they will later measure actual expenditure against budget items. These items include but are not limited to the costs associated with the project management team, project costs, materials and equipment, rent and utilities, venue rental and catering (for hosting activities), and communications costs. The output of this process is the cost management plan.

**Chart 19: Cost Management Roles and Responsibilities**

|  |  |
| --- | --- |
| **Role** | **Description** |
| Project Sponsor | Provides sponsorship for the project. Has budget ownership for the project. Identifies, approves and/or denies cost change requests. |
| Project Manager | Provides ongoing cost management to the approved baseline. Responsible for preparing the cost management plan, monitoring and tracking costs, preparing cost status reports, ensuring cost transactions are adequately and properly documented. Also identifies, defines, evaluates, verifies, executes and communicates cost change requests. |
| WWF Contracts Officer | Project team member that supports tracking of contract costs such as with consultancies and service providers. |
| WWF Finance and Administration Officer | Project team member that supports payment and documentation of contract costs such as with consultancies and service providers, as well as other office finance and administration costs which arise in execution of the project. |

Note: own work

**4.5.2 Estimate Costs**

The Estimate Costs process in project management involves developing an approximation of the costs required to complete project activities. It is a key process in cost management that helps establish the project's budget and financial plan. Its inputs are drawn from the project management plan, historical data from previous project documents such as the risk registers, assumptions log, as well as the organization’s EEFs and OPAs. The process outputs cost estimates, a basis of estimates, and updated project documents, which provide the foundation for the project’s budget and cost control activities. The table below shows the estimate project costs, the basis for the estimate and the baseline costs for the project activities. WWF as part of its OPAs usually adds on ten percent contingency costs to its project budgets, this includes costs for additional management reserves should it become necessary.

**Chart 20: Estimate Project Costs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WBS ID** | **Work Package** | **Task No.** | **Activity Name** | **Activity Description/Basis of Estimate** | **TOTAL (USD)** |
| **2.1** | **Belize Situational Analysis** | 2.1.1 | Literature review | Consultant fees | $5,000 |
| 2.1.2 | Submission of Belize's interim situational analysis | Consultant fees |
| 2.1.3 | Submission of Situational analysis and gap analysis final report | Consultant fees | $10,000 |
| 2.1.4 | Enforcement mapping (detection to prosecution) | Consultant fees | $20,000 |
| 2.15 | Submission of technical assessment report on Belize’s legislative and regulatory framework | Consultant fees |
| **2.2** | **Qualitative and Quantitative Research** | 2.2.1 | Formulation of data collection strategy | Consultant fees | $2,000 |
| 2.2.2 | Data analysis | Consultancy fees, travel and per diem costs, data collection costs | $8,000 |
| 2.2.3 | Submission of data analysis synthesis report | Consultant fees | $10,000 |
| **2.3** | **Development of Strategic Action Plan** | 2.3.1 | Co-design and validation workshop | Consultancy fees, travel and per diem costs, workshop costs | $2,000 |
| 2.3.2 | Submission of workshop report | Consultancy fees |
| 2.3.3 | validation workshop | Consultancy fees,  Workshop costs | $2,500 |
| 2.3.4 | Validation Workshop Report | Consultancy fees |
| 2.3.5 | Submission of strategic action plan | Consultancy fees |
| 2.3.6 | Publication of report | Staff costs, office administration costs, printing costs, online publication costs | $2,500 |
| **2.4** | **Project Management** | 2.4.1 | project planning | Staff costs, office administration costs, communication costs | $20,000 |
| 2.4.2 | Acceptance of report 1 | WWF Staff costs |
| 2.4.3 | Acceptance of report 2 | WWF Staff costs |
| 2.4.4 | Acceptance of report 3 | WWF Staff costs |
| 2.4.5 | Acceptance of report 4 | WWF Staff costs |
| 2.4.6 | Acceptance of report 5 | WWF Staff costs |
| 2.4.7 | Acceptance of report 6 | WWF Staff costs |
| **2.5** | **Project Closure** | 2.5.1 | project evaluation | Consultancy fees – lump sum | $3,000 |
| 2.5.2 | project audit | Consultancy fees – lump sum | $3,000 |
| 2.5.3 | project closure | Office administration costs | $2,000 |

Note: own work

**4.5.3 Determine Budget**

The Determine Budget process involves aggregating cost estimates, adding reserves for risk management, and ensuring that the project budget aligns with organizational constraints. It uses inputs such as cost estimates, risk registers, and historical data, and tools like cost aggregation, reserve analysis, and expert judgment. The process outputs the cost baseline, funding requirements, and updated project documents, providing a detailed financial framework for the project. This budget becomes the foundation for tracking and managing project costs throughout its lifecycle. The tables below highlight the planned budget for the project shown by activity and breakdown by month.

**Chart 21: Project Budget**

| **WBS ID** | **WBS Deliverable** | **Estimated Cost (USD)** |
| --- | --- | --- |
| 2.1 | Belize Situational Analysis | $35,000 |
| 2.2 | Quantitative and Qualitative Analysis | $20,000 |
| 2.3 | Develop Strategic Action Plan | $5,000 |
| 2.4 | Project Management | $22,000 |
| 2.5 | Project Closure | $8,000 |
|  | **Total Cost Estimate** | $90,000 |
|  | Contingency (10%) | $10,000 |
|  | **Total Project Budget** | $100,000 |

Note: own work

**Chart 22: Disbursement Projection**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WBS ID** | **WBS Deliverable** | **Disbursement (Quarter 1)** | **Disbursement (Quarter 2)** | **Estimated Cost (USD)** |
| 2.1 | Belize Situational Analysis | $35,000 | $0 | $35,000 |
| 2.2 | Quantitative and Qualitative Analysis | $0 | $20,000 | $20,000 |
| 2.3 | Develop Strategic Action Plan |  | $5,000 | $5,000 |
| 2.4 | Project Management | $10,000 | $12,000 | $22,000 |
| 2.5 | Project Closure |  | $8,000 | $8,000 |
|  | Contingency | $5,000 | $5,000 | $10,000 |
| **Total** | | $50,000 | $50,000 | $100,000 |

Note: own work

**Chart 23: Projected Monthly Expenditures**

| **WBS No.** | **Description** | **Projected Expenditures** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **June** | **July** | **Aug** | **Sept.** | **Oct.** | **Nov.** |
| 2.1 | Belize Situational Analysis | - | $15,000 | $20,000 | - | - | - |
| 2.2 | Quantitative and Qualitative Analysis | - | - | - | $3,000 | $17,000 | - |
| 2.3 | Develop Strategic Action Plan | - | - | - | - | - | $5,000 |
| 2.4 | Project Management | $2,000 | $4,000 | $4,000 | $4,000 | $4,500 | $3,500 |
| 2.5 | Project Closure | - | - | - | - | - | $8,000 |
|  | Contingency | - | - | $5,000 | - | $5,000 | - |
| **TOTAL** | | $2,000 | $19,000 | $29,000 | $7,000 | $26,500 | $16,500 |

Note: own work

**4.5.4 Control Costs**

The Control Costs process in project management involves monitoring the project’s financial performance to ensure that costs remain within the approved budget. This process aims to identify and manage cost variances, ensuring that the project is delivered within its financial constraints. It is an ongoing process that helps in tracking, analyzing, and controlling project costs. The inputs for this process are drawn from the cost management plan including the cost baseline and performance measurement baseline, project documents, project funding requirements, work performance data and OPAs. The tools and techniques used for this project include expert judgment, MS Project (and Microsoft excel) as the project management information system and data analysis, most notably earned value analysis (EVA).

EVA assesses a project's performance by comparing the planned progress to the actual progress. It helps determine if the project is on track in terms of scope, cost, and schedule. EVA is used to forecast potential future performance and to make necessary adjustments to stay within the project's goals. It uses the following key metrics:

* Cost Variance (CV) = EV - AC: Measures the cost performance. A positive CV indicates the project is under budget, while a negative CV indicates a cost overrun.
* Schedule Variance (SV) = EV - PV: Measures the schedule performance. A positive SV indicates the project is ahead of schedule, while a negative SV indicates it is behind.
* Cost Performance Index (CPI) = EV / AC: Measures cost efficiency. A CPI less than 1 indicates cost overruns, while a value greater than 1 indicates cost efficiency.
* Schedule Performance Index (SPI) = EV / PV: Measures schedule efficiency. An SPI less than 1 indicates the project is behind schedule, while a value greater than 1 indicates the project is ahead.

The chart below shows the planned EVA for the project. It is typically performed at regular intervals throughout the project, such as weekly, monthly, or after major milestones, to track project performance and ensure alignment with the project baseline. It provides valuable insights into how well the project is performing in terms of budget and schedule, allowing project managers to take corrective actions if necessary.

**Chart 24: Planned Earned Value Analysis for the Project**

Note: own work

This project does not anticipate having great variance in the costs with the existing scope of work. Changes in costs would largely be triggered if additional work was required, or if the scope of work was reduced. The greatest risk to delays would be mainly occur during the data collection. Should the latter occur, there would be adjustments to the schedule but not to the costs through (no-cost extensions to the consultancy contract). In any case, the change request processes would be triggered and followed as outlined in the section 4.3.6 (Perform Integrated Change Control Process). Other outputs for this process include the work performance information, cost forecasts, change requests, updates to project management plans and updates to project documents.

# 4.6 Quality Management Plan

**4.6 Project Quality Management**

Project quality management includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements to meet stakeholders’ objectives. Project Quality Management also supports continuous process improvement activities as undertaken on behalf of the performing organization (PMI 2017, p. 271). The process includes quality planning (defining what quality means for the project), quality assurance (ensuring processes are in place to meet quality standards), and quality control (measuring and monitoring the deliverables to ensure they meet the required standards).

**4.6.1 Plan Quality Management**

The Plan Quality Management process focuses on identifying the quality standards and requirements for the project and determining how to achieve and monitor those standards throughout the project lifecycle. This is critical to ensuring that the project deliverables meet stakeholder expectations and comply with applicable regulations or standards. This process sets the foundation for quality assurance and quality control activities in later stages of the project.

Inputs to the Plan Quality Management Process are drawn from the:

1. Project Charter which provides high-level project goals, objectives, and constraints that help define quality expectations and requirements.
2. Project Management Plan which includes any existing baselines (scope, schedule, cost) and subsidiary plans (such as the Risk Management Plan) that may influence the quality planning process.
3. Project documents such as the stakeholder register, requirements documentation, etc.
4. Enterprise Environmental Factors which include those external factors like company policies that can impact quality planning.
5. Organizational Process Assets which include existing quality policies, historical data from previous projects, templates, and lessons learned that can inform the planning process.

The tools and techniques which are using in the Plan Quality Management Process include: expert judgment which is done through stakeholder consultations, or consultations with subject matter experts, or quality professionals to define quality standards and criteria for the project. Other tools and techniques used also include: data gathering techniques, data analysis techniques, decision making, data representation and meetings.

The outputs of the Plan Quality Management Process include:

1. Quality Management Plan which is the key document that outlines how quality will be defined, managed, and controlled throughout the project. It includes:

* Quality objectives and standards for the project.
* Roles and responsibilities for quality management.
* Quality assurance and control processes.
* Specific tools and techniques for measuring and managing quality.
* Metrics and criteria for assessing deliverable quality.

1. Quality Metrics which contains specific metrics and criteria that will be used to measure the quality of the project’s deliverables (e.g., defect rates, performance standards).
2. Quality Checklists which can include predefined lists of items, tasks, or processes that must be verified to ensure quality standards are met at each stage of the project.
3. Project Document Updates which include any updates to the project's documentation, such as the Risk Register or Stakeholder Register, that reflect new quality-related information.

**4.6.2 Manage Quality**

The Manage Quality process in project management focuses on ensuring that the project’s deliverables meet the required quality standards and that the project's quality management plan is executed effectively. Inputs are drawn from the project charter, project management plan, project documents, EEFs and OPAs. Since this project involves desktop review of literature, data collection and co-design of a strategic plan, much of the quality metrics are towards the products produced. Other metrics relate to the quality of work produced by the project team and their ability to adhere to project timelines, costs and process efficiencies.

**Chart 25: Quality Metrics and Baseline**

| **Quality Objective** | **Metric** | **Metric Definition** | **Expected Outcome/Results** | **Measurement Frequency** | **Responsible** |
| --- | --- | --- | --- | --- | --- |
| 1. To ensure that literature review for studies includes at least 90% of the key relevant sources from peer reviewed journals or authoritative publications. | Relevance and accuracy | Percentage of peer reviewed journals or authoritative publications used as resources | Technical reports with appropriate citations utilizing WWF reporting templates | Per report | Local consultant |
| 2. To achieve 100% alignment with project requirements, with a target of less than 2% error rate in factual accuracy and ensure that 90% of stakeholders find the documents clear, understandable, and free from ambiguity. | Thoroughness of review, accuracy | error rate  project alignment rate | Stakeholders find documents clear, understandable, and free from ambiguity. | Per report | Local consultant |
| 3. To ensure participation of 90% of key stakeholders in workshop activities (co-design and validation) | Stakeholder participation | Percentage participation  Alignment with objectives  Feasibility of recommendations | Participant register  Recommendations arising from workshop | Per activity | Local consultant |
| 4. To ensure alignment with the triple constraint of scope, schedule, and cost to maintain project balance and efficiency. | Scope statement completeness | Percentage of deliverables completed | 100% of project scope completed | Monthly | Project Manager |
| Cost performance index (CPI) | Ratio of earned value to actual value | CPI maintained at 1.0 or above | Monthly | Project Manager |
| Schedule Variance | Variation between planned and actual schedule | Schedule variance within ± 5 days | Monthly | Project Manager |
| 5. To ensure 95% accuracy on administrative and financial transactions. | Staff proficiency | Adherence to organizational policies and procedures maintaining maximum accuracy level | 95% staff accuracy in completing organizational documentation (financial and administrative). Work is complete and 95% error free. | Monthly | Project Manager |

**Chart 26: Quality Documents**

|  |  |
| --- | --- |
| **Category** | **Quality Documents and Standards** |
| Standard operating procedures | * SOPs for financial and administrative transactions: consultant payments, vendor payments, etc. |
| Quality records | * Acceptance of deliverables |
| Reporting | * Grievance report * WWF progress reports * Workshop reports * Change request records |
| Checklists and templates | * WWF document templates * WWF templates: reports, workshop participant lists, agendas, etc. * Project checklists * Financial report templates * WWF contract templates * Communication templates, e.g. Press releases, web publications |
| Specifications and requirements | * Laptop specifications for staff |

Note: own work

**4.6.3 Control Quality**

Control Quality is a process in project quality management that focuses on monitoring and measuring project results to ensure that the deliverables meet the defined quality standards. By effectively executing the Control Quality process, project managers can ensure that the project’s deliverables consistently meet the established quality standards and are aligned with stakeholder expectations, leading to greater project success and client satisfaction. Inputs for this process include: the project management plan, project documents such as the quality metrics, risk register, issues log, and work performance data, approved change requests, deliverables, EEFs and OPAs.

Tools and techniques used for this process include data gathering through the use of checklists and surveys to assess quality. Other techniques include audits such as those conducted at the end of the project to assess compliance with administrative and financial procedures and processes. The outputs of this process include:

1. quality control measurements which could be data or reports that show the quality performance of the deliverables and project processes.
2. Verified deliverables which are the outputs that have been received, reviewed and confirmed to meet the expected quality requirements.
3. Change requests, if quality issues are identified, formal requests for changes may be generated to address problems and implement improvements.
4. Work performance information which summarizes data on quality performance and any corrective actions taken.
5. Updates to project management plans and project documents as necessary.

# 4.7. Resources Management Plan

Project resource management is the process of planning, allocating, and the optimizing resources needed for the successful execution of the project such as people, equipment, materials, and budget. This project includes several key activities for managing resources. These are:

* Resource Planning in which the types and quantities of resources needed for the project are identified and a strategy is developed for obtaining them.
* Resource Allocation where the right resources to specific tasks are assigned based on their availability, skills, and project requirements.
* Resource Scheduling where the project manager determines when resources are needed and coordinates their availability throughout the project timeline.
* Resource Optimization ensures that resources are used efficiently to avoid shortages, overuse, or underuse. This includes managing workloads and adjusting schedules when necessary.
* Monitoring and Controlling involves continuously tracking resource usage and performance to ensure that the project stays on course and adjusting as needed to resolve any issues.

Due to the nature of this project, the Project Manager’s role is particularly critical in ensuring that the necessary resources are obtained. In particular, the Project Manager should have strong emotional intelligence which is for managing both him/herself as well as external relationships. Part of the team providing support for this project is located in Guatemala and the United States, the develop team and manage team processes are particularly critical. The following diagram highlights the six processes within project resource management.

Plan Resource Management is the process in plan project management that involves defining how resources (people, equipment, materials, etc.) will be identified, acquired, and managed throughout the project. The goal is to ensure that resources are efficiently and effectively utilized to meet project objectives. Within WWF, there are several project managers for various projects. The Project Manager for this project, also has other project which he/she manages. As such, it is critical that the necessary resources are obtained, as other projects may compete for some of the same resources which could significantly impact project costs, schedules, risks, quality and other project areas.

Key elements of the Plan Resource Management process include:

* Identifying specific resource requirements for each task in the project as well as determining their quality, skill set and availability.
* Defining the roles and responsibilities of team members and other stakeholders, ensuring clear ownership and accountability. For example, it is critical that environmental enforcement data be obtained from external stakeholders such as the enforcement agencies (the Belize Fisheries Department, Police Department, etc.)
* Creation of a resource management plan which will detail how resources will be acquired, allocated, and managed. This includes timelines, budget considerations, and methods for optimizing resource use.
* Determine whether resources will be acquired internally or externally and planning for procurement if necessary.
* Team development which involves identifying training needs and strategies for building a cohesive and skilled project team.
* Conflict resolution which involves developing strategies to address potential conflicts or resource constraints during the project.

The inputs for the plan resource management are the Project Charter , Project Management Plan, specifically the scope management plan and schedule management plan that contribute details about the work and timeline, which inform resource planning, EEFs, OPAs, and various project documents. These include but are not limited to:

* Stakeholder Register: Contains information about project stakeholders and their roles, which helps in determining resource needs and allocation.
* Risk Register: Identifies potential risks that may affect resource availability or allocation, helping to plan for mitigation strategies.
* Assumption Log: Lists assumptions made about resources and other project aspects, which can influence resource planning.

The tools and techniques used in the plan resource management process are:

1. Expert judgement which includes consulting with experts or experienced stakeholders to leverage their knowledge and insights regarding resource needs, availability, and best practices for managing resources. The project will draw on the expertise of several WWF staff and experts from external offices with specific experience in conducting environmental enforcement studies in other areas to guide the process in Belize.
2. Data representation techniques which can include various methods to communicate critical information to team members. These can include hierarchical charts such as the:

* work breakdown structure (WBS) which visually depicts the decomposition of work packages providing the high levels of responsibility. The project’s WBS is shown below.

Figure 7: Project Work Breakdown Structure

A diagram of a company's organization chart

Description automatically generated

Note: own work

* Organizational breakdown structure (OBS) which shows the organization’s departments etc with the project activities or work packages listed under each department. The project’s OBS is shown below.

**Figure 8: Project Organizational Breakdown Structure**

Note: own work

* Resource breakdown structure (RBS) which is the hierarchical list of team and physical resources related by category and resource type that is used for planning, managing, and controlling project work. Each descending level represents an increasing detailed description of the resource until the information is small enough to be used in connection with the WBS to allow the work to be planned, monitored and controlled.

**Figure 9: Resource Breakdown Structure (Note: own work)**

* Responsibility Assignment Matrix (RAM) shows the project resources assigned to each work package. It is used to illustrate the connections between work packages or activities and project team members. The matrix format shows all the activities associated with one person and all the people associated with one activity. One example of a RAM is a RACI (responsible, accountable, consult, and inform) chart. The tables below show examples of a RAM and RACI chart respectively.

**Chart 24: Responsibility Assignment Matrix**

| **Responsibility Assignment Matrix** | | | | |
| --- | --- | --- | --- | --- |
| **Task** | **Responsible** | **Accountable** | **Consulted** | **Informed** |
| Conduct literature review | Environmental Enforcement Local consultant | Project Manager | Environmental Enforcement Specialist WWFUS | PSC  WWF |
| Conduct technical assessment of Belize’s environmental enforcement | Environmental Enforcement Local consultant | Project Manager | Environmental Enforcement Specialist WWFUS  Local enforcement agencies | PSC  WWF Contracts Officer,  WWF Finance Officer |
| Conduct qualitative and quantitative research | Environmental Enforcement Local consultant | Project Manager | Local enforcement agencies | Local enforcement agencies |
| Conduct qualitative and quantitative data collection | Environmental Enforcement Local consultant | Project Manager | Local enforcement agencies | Local enforcement agencies |
| Conduct data analysis | Environmental Enforcement Local consultant  Environmental Enforcement Specialist WWFUS | Project Manager | Environmental Enforcement Specialist WWFUS  Local enforcement agencies | Local enforcement agencies  WWF legal counsel |
| Synthesize data report | Environmental Enforcement Local consultant | Project Manager | Environmental Enforcement Specialist WWFUS | PSC  WWF Contracts Officer,  WWF Finance Officer |
| Develop strategic action plan | Environmental Enforcement Local consultant | Project Manager | Environmental Enforcement Specialist WWFUS  Local enforcement agencies | PSC  WWF Contracts Officer,  WWF Finance Officer  WWF Legal Counsel |
| Co-design and validation workshop | Environmental Enforcement Local consultant  Local Enforcement Agencies | Project Manager | Environmental Enforcement Specialist WWFUS  Local enforcement agencies | PSC  WWF Contracts Officer,  WWF Finance Officer |
| Publish workshop report | Environmental Enforcement Local consultant | Project Manager | Environmental Enforcement Specialist WWFUS  Local enforcement agencies | PSC  WWF Admin Officer |

Note: Own work

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **RACI Chart** | **Person** | | | |
| **Activity** | Environmental Enforcement Local consultant | Project Manager | Environmental Enforcement Specialist WWFUS | Project Sponsor |
| Conduct literature review | R | A | C | I |
| Conduct technical assessment of Belize’s environmental enforcement | R | A | C | I |
| Conduct qualitative and quantitative research | R | A | C | I |
| Conduct qualitative and quantitative data collection | R | A | C | I |
| Conduct data analysis | R | A | C | I |
| Synthesize data report | R | A | C | I |
| Develop strategic action plan | R | A | C | I |
| Co-design and validation workshop | R | A | C | I |
| Publish workshop report | R | A | C | I |
|  | R = responsible A = accountable C = Consult I = Inform | | | |

Note: own work

1. Organizational Theory provides the information regarding the way in which people, teams and organizational units behave.
2. Meetings will include organizing discussions with key stakeholders to define resource needs, assign roles and responsibilities, and ensure alignment on resource strategies.

The outputs for the Plan Resource Management Plan include:

1. Resource Management Plan which is the core output, detailing how resources (both human and physical) will be managed, including roles and responsibilities, resource allocation, resource calendar, and how to address resource-related risks.
2. The team charter document includes but is not limited to the team's operating guidelines, including expectations, values, decision-making processes, and how the team will communicate and resolve conflicts.
3. Updates to project documents such as the assumptions log and risk register.

**4.7.2 Estimate Activity Resources**

During the estimate activity resources process, the types and quantities of resources, whatever they may be which are required to complete each project activity are determined. This process is performed periodically throughout the project as needed. The outputs from this process form the basis for subsequent processes, such as developing the project schedule and acquiring resources, ensuring that the right resources are allocated at the right time for the project's success.

The inputs for this process are:

1. Project management plan which provides the overarching plan that guide for the project. Key components influencing the estimate activity resources process include the:

* Resource management plan which provides guidelines for how resources will be managed, including resource allocation strategies.
* Scope Baseline which defines the project scope, including the Work Breakdown Structure (WBS) and its associated deliverables, which help identify resource needs.

1. Project documents such as the:

* Activity attributes which provide additional details about each activity, such as specific resource requirements and constraints.
* Activity list, which is the detailed list of project activities, which is essential for identifying which activities require resource estimation.
* Assumptions log which includes any assumptions regarding resource availability or constraints are documented in the assumption log, which helps with accurate estimations.
* Cost estimates for the resources
* Resource calendars which define when resources are available, helping to schedule resources appropriately.

1. Risk register which describe the individual risks that can impact resource selection and availability Enterprise environmental factors which are the external conditions like market conditions, resource availability, and geographical considerations that might affect the resources needed.
2. Organizational process assets include the tools, templates, historical information, and knowledge from previous projects that assist in estimating the resources required.

The tools and techniques used for this process are:

1. Expert judgement which involves consulting with subject matter experts, team members, or professionals who have experience or specialized knowledge in estimating the required resources.
2. Bottoms-up estimating which involves estimating the resources required for each individual activity in detail and then aggregating these estimates to determine the overall resource requirements.
3. Analogous estimating is a quick estimation technique which uses information regarding resources from a previous similar project as the basis for estimating a future project.
4. Parametric estimating uses an algorithm or a statistical relationship between historical data and other variables to calculate resource quantities needed for an activity, based on historical data and project parameters.
5. Data analysis can include such techniques as alternatives analysis which used to explore different options for resource allocation, considering various scenarios and their impact on the project. This helps in choosing the most effective resources.
6. Project management information system is a tool which integrates data and information about resources, allowing for more accurate estimation by providing access to past data, resources availability, and schedules. This project uses Microsoft Project software to manage the project.
7. Meetings is the most common technique used for Project Managers are they would meet with key team members and other key stakeholders to estimate the resources needed per activity.

The outputs of this process include:

1. Resource requirements which is a detailed list specifying the types, quantities, and characteristics of resources (e.g., personnel, equipment, materials) needed for each activity. This includes any special qualifications, skills, or resources that might be required.
2. Basis of estimates which include additional supporting details supporting the resource estimate include but are not limited to:

* Methods used to develop the estimate
* Assumptions associated with the estimates
* Known constraints
* Range of estimates
* Confidence level of the estimates

1. Resource Breakdown structure which is the hierarchical representation of the resources needed for the project. It categorizes resources by type and provides clarity on what resources are required at different levels of the project. See figure 9 for the project’s RBS.
2. Updates to project documents such as the activities list, activity attributes, resource calendars, assumptions log, lessons learned register, etc.

**4.7.3 Acquire Resources**

The acquire resources process involves obtaining the necessary resources (human, equipment, materials, etc.) to complete the project activities. The goal is to ensure that the right resources are available at the right time, in the right quantities, and with the right skills.

The inputs for this process include:

1. Project management plan including the resource management plan,
2. procurement management plan and cost baseline
3. Project documents such as the resource breakdown structure, resource requirements, stakeholder register etc.
4. Enterprise environmental factors
5. Organizational process assets such as tools, templates and historical data

Tools and techniques used for this process include decision making techniques such as multicriteria decision analysis, interpersonal and team skills such as negotiations to secure resources, which may involve suppliers or other stakeholders, pre-assignment where the resources are determined in advance and virtual teams, as several of the team members from supporting WWF offices are in different countries.

The outputs for this process are the:

1. Physical resource assignments which include details about which resources will be assigned to each activity
2. Project team assignments which provide updates on personnel assignments to specific tasks
3. Resource calendars which is the schedule specifying when resources will be available
4. Change requests are required if the resource acquisition process leads to changes in scope or schedule.
5. Updates to project management plans such as the resource management plan, and cost baseline
6. Updates to project documents such as the lessons learned register, project schedule, RBS, resource requirements, risk register, etc.
7. Enterprise environmental factors updates could include things such as resource availability and the amount of the organization’s consumable resources have been used.
8. Organizational process assets updates in this process include but are not limited to documentation relating to acquiring, assigning and allocating resources.

**4.7.4 Develop Team**

Develop team is the process which involves improving competencies, team member interaction, and the overall team environment to enhance project performance (PMI, p. 336). The team for the project is drawn from local staff members of the WWF Mesoamerica Belize field office team, as well as others from the WWF Mesoamerican Guatemala and WWFUS offices. Many of these team members are also involved in other projects, and so it is critical that the team maintain good communication and relationships to keep each other informed on progress, and be able to effectively resolve any issues that arise. The inputs for this process include:

1. The Project management plan, specifically the resource management plan which outlines how the resources will be managed, including the approach to acquiring, developing and managing the team.
2. Project documents such as the:

* Lessons learned register
* Project schedule
* Project team assignments
* Resource calendars
* Team charter which outlines the team goals, roles and expected behaviours, helping to establish a foundation for team development.

1. Enterprise environmental factors which include the external conditions that can influence team development, such as organizational culture, structure, geographic locations, or available training programs.
2. Organizational Process Assets which include the existing training materials, templates for team development plans, lessons learned from past projects, or organizational policies on human resource management. Any relevant historical knowledge or best practices for team management that can inform the approach to developing a successful team.

The tools and techniques for the develop team process are the methods that are used to build and improve team performance and dynamics. These include:

1. Colocation which brings team members together in a shared location to enhance communication, collaboration and team cohesion. Face to face interactions are utilized whenever possible, especially when meeting with local persons in Belize. Face to face meetings/interactions are preferred as it improves problem solving and decision-making.
2. Virtual teams are mainly used for this project as several team members are located in different countries.
3. Communication technology is important in addressing team development issues in collocated and virtual teams. These include the use of portals, video conferencing, audio conferencing, email/chat. Virtual meetings and collaborations are utilize video conferencing programs such as Microsoft Teams and Zoom. For more immediate communication, WhatsApp messenger is used to create groups which allows text, audio and video calls, sharing of video and photo images, quick polls etc. In this project, Microsoft programs such as Outlook are used for emails, SharePoint is used to share and collaborate with project documents, and Microsoft Project is used to manage the Project itself.
4. Interpersonal and Team Skills use emotional intelligence, conflict resolution, leadership, and negotiation skills to manage relationships and team dynamics. These skills help in resolving conflicts, motivating the team, and fostering a collaborative working environment.
5. Recognition and rewards are used for recognizing individual and team achievements to motivate team members and reinforce positive behaviors. Rewards can be formal or informal, such as public recognition or incentives like bonuses or promotions.
6. Training can provide team members with skills development or certifications to improve their competency in areas relevant to the project. This can also include team-building exercises to enhance collaboration.
7. Individual and team assessments give the project manager and the project team insight into areas of strengths and weaknesses. These tools help project managers assess team members’ preferences, aspirations, how they process and organize information, how they make decisions, and how they interact with people (PMI, p.342)
8. Meetings are used to discuss and address pertinent topics for developing the team. These meetings may include but are not limited to project orientation meetings, team building meetings and team development meetings.

The outputs for this process represent the results or deliverables produced because of team development activities. These outputs include:

1. Team performance assessments include the evaluations of the team’s effectiveness, including their ability to meet project goals, collaborate, and perform as expected. These may be based on specific metrics or qualitative feedback and are used to identify areas for improvement or recognize strengths.
2. Change requests are based on assessments or issues identified during team development, change requests may be initiated to adjust project plans, resource allocation, or team composition. These could involve modifying team roles, adjusting timelines, or addressing conflicts or resource gaps.
3. Project management plan updates specifically to the resource management plan
4. Project document updates which can include the lessons learned register, project schedule, project team assignments, resource calendars, and team charter
5. Enterprise environmental factor updates
6. Organizational process assets updates

**4.7.5 Manage Team**

The Manage Team process is a continuous effort to ensure that the project team is performing at its best, addressing challenges in a timely manner, and ensuring that resources are being used efficiently to achieve project objectives. The inputs for the Manage Team process in project resource management are the elements required to effectively oversee and manage team performance throughout the project. These inputs include:

1. Project management plan which include the resource management plan guiding how to manage and allocate resources including team members throughout the project. It would also include the risk management plan which would identify potential risks relating to team performance and provide strategies to mitigate or address them.
2. Project documents including the team charter, issues log, lessons learned register and project team assignments.
3. Work performance reports which are the work information intended to generate decisions, actions or awareness. Performance reports that can help the project team management include results from schedule control, cost control, quality control, and scope validation.
4. Team performance assessments include the ongoing formal and informal assessments of the project team’s performance.
5. Enterprise environmental factor updates
6. Organizational process assets updates

The tools and techniques for the manage team process are:

1. Interpersonal and team skills most critical of which are conflict management, decision making tools, emotional intelligence, influencing and leadership.
2. Project management information system (MS Project)

The outputs of this process include but are not limited to change requests, project management plan updates, especially to the resource management plan, schedule baseline and cost baseline, updates to project documents, and updates to enterprise environmental factors.

**4.7.6 Control Resources**

The control resources process focuses on ensuring that the resources (human, materials, equipment, etc.) are being used as planned and are available when needed. It involves monitoring resource performance, addressing issues, and making necessary adjustments to keep the project on track. A critical part of this project involves data collection from external agencies. Hence it is critical that the project manage team pay careful attention to this process to ensure that adjustments are made during the project implementation to remain within the scope, quality, time and budget. The inputs for this process include:

1. The project management plan, in particular the resource management plan
2. Project documents which include but are not limited to the issues log, lessons learned register, physical resources assignments, project schedule, resource breakdown structure, resources requirements, and risk register.
3. Work performance data
4. Agreements
5. Organizational process assets

The tools and techniques used for this process include:

1. Data analysis, most critical to this project being the performance reviews and cost-benefit analysis
2. Problem solving
3. Interpersonal and team skills such as negotiation and influencing
4. Project management information system

The outputs of this process include:

1. Work performance information which provide information on the actual data usage of resources compared to the planned usage. These include details on resource performance, utilization and discrepancies.
2. Change requests may occur based on monitoring and performance data, and be done to adjust the resource allocation, procurement plans, or schedules.
3. Updates to the project management plan, specifically the resource management plan, schedule baseline and cost baseline
4. Updates to project documents such as the assumptions log, issues log, lessons learned register, physical resource assignments, resource breakdown structure, and risk register.

# 4.8. Risk Management Plan

Project risk management includes all the processes of identifying, assessing, and controlling potential risks that could impact a project's objectives. The goal is to minimize the likelihood and impact of negative events while maximizing opportunities for success. Effective project risk management helps ensure that projects are completed on time, within budget, and with the desired quality, while addressing uncertainties proactively.

**4.8.1 Plan Risk Management**

Plan Risk Management is the process of defining how to approach, plan, and execute risk management activities throughout the lifecycle of a project. It sets the framework for identifying, assessing, and addressing risks effectively. The project manager would first define the objectives for risk management and set the overall approach. This includes determining the level of detail needed for risk analysis (e.g., qualitative vs. quantitative), the timing of risk reviews, and how frequently risk updates should be incorporated into the project. The project manager will assign responsibilities for risk management to specific team members based on their expertise, while also working closely with other team members who have specialized knowledge in particular risk areas. The project team in this phase would be to provide input on potential risks they foresee based on their specific expertise and suggest the best approach for managing those risks.

Team roles would include:

* The Risk Manager would support the project manager in organizing risk meetings, ensuring proper documentation, and maintaining the risk register.
* The Project Team Members would act as subject-matter experts, providing insights into their areas and suggesting risks that might affect their domain.
* Stakeholders (including sponsors, etc.) could help identify risks based on their experience and expectations.

The Plan Risk Management process uses the following tools and techniques. These tools and techniques are designed to ensure that the risk management plan is comprehensive, aligned with project objectives, and capable of addressing potential risks throughout the project lifecycle. They help ensure that the approach to managing risks is both systematic and adaptable.

1. Expert Judgment which utilizes the knowledge and experience of experts (e.g., senior project managers, risk management specialists) to guide decisions on the risk management approach, methodologies, and processes. Expert judgment is crucial in determining how risks will be managed based on industry standards or organizational practices.
2. Data Gathering and Representation Techniques such as:

* Interviews: Conducting one-on-one discussions with stakeholders, team members, or subject-matter experts to gather insights on potential risks and how they should be managed.
* Focus Groups: Group discussions with key stakeholders to collect input on the project’s risk management approach.
* Questionnaires and Surveys: Collecting structured feedback from a broader group of stakeholders or team members to understand their risk perspectives and preferences for managing risks.

1. Meetings including collaborative sessions with key stakeholders and project team members to discuss and agree upon the risk management approach. These meetings are essential for aligning expectations, defining roles, and establishing a shared understanding of the risk management process.

The output of the Plan Risk Management is the Risk Management Plan which would outline the risk management strategy, methodology, roles, and responsibilities, and risk control measures. I would define how risks will be identified, assessed, and tracked throughout the project. The project team would support the process by provide their input regarding the types of risks they foresee in their areas, contributing to the identification process. Subject matter experts would contribute technical expertise on specific risk scenarios related to their domain.

**4.8.2 Identify Risk**

Identify Risks is the process in project risk management where potential risks that could affect the project are systematically identified and documented. The Project Manager would oversee the risk identification process by organizing brainstorming sessions, interviews, and surveys with team members to ensure that all potential risks are captured. Within the project team, project team members would actively participate in brainstorming sessions to identify risks from their perspective. Technical team members would flag technical risks, while the Operations Team might identify process risks. Stakeholders may also be consulted, particularly for external risks like market changes, legal factors, or regulations. This process aims to uncover all possible risks—both threats and opportunities—so they can be addressed and managed proactively. It involves gathering inputs from various sources, using different techniques to spot risks, and creating a comprehensive list of risks that might impact the project’s objectives.

The inputs for the Identify Risks process in project risk management are the key documents and information sources that provide the context and data needed to identify potential risks. These inputs help guide the risk identification process by offering insights into the project’s scope, environment, and stakeholders. Key inputs include the Project Management Plan including the risk management plan and other subsidiary plans. The Risk Management Plan: Provides guidelines on how risks will be identified, assessed, and managed, and defines risk categories, processes, and roles. Other Subsidiary Plans: Plans like the scope, schedule, and cost management plans provide details about project objectives, constraints, and assumptions, which can help identify risks.

1. Project Documents:

* Project Charter which outlines the project's high-level goals, objectives, and assumptions, offering a foundational understanding of potential risks.
* Assumptions Log which documents assumptions made during the project planning process, which may become sources of risk if they are later proven inaccurate.
* Stakeholder Register which identifies the project's stakeholders, their interests, and their potential impact on the project, helping to identify risks related to stakeholder expectations and concerns.
* Lessons Learned Register which contains insights from previous projects that can help identify similar risks or risks that were encountered before.
* Issue Log which provides information on current issues that might evolve into risks or highlight unresolved risks.
* Cost and duration estimates

1. Enterprise Environmental Factors include external factors that could impact the project’s risks, including the organizational culture, market conditions, legal or regulatory requirements, industry standards, and environmental factors that might influence the project’s success.
2. Organizational Process Assets include the internal factors and resources that help identify risks, such as: templates, guidelines, and historical information such as previous project risk data, risk management methodologies, and checklists that offer insight into common risks in similar projects. Risk Management Policies: Organizational processes for managing risks, including standard approaches or tools used to identify and track risks.

The tools and techniques used during the Identify Risks process are listed below. These techniques help systematically identify and document risks from various perspectives ensuring that no critical risk is overlooked.

1. Expert Judgement which involves consulting with experienced individuals or subject matter experts to gain insights into potential risks based on their knowledge and experience with similar projects.
2. Data gathering using techniques such as:

* Brainstorming which could include a collaborative session where the project team and stakeholders generate a wide range of potential risks without judgment. It encourages creativity and diverse thinking to identify as many risks as possible.
* Checklists which use predefined lists or checklists, often based on historical data from similar projects or industry standards, to ensure that common risks are considered. This method helps ensure that no typical risk is overlooked.
* Interviews which include one-on-one discussions with stakeholders, project team members, or subject matter experts to explore and uncover risks based on their knowledge and experience. Interviews are useful for gathering detailed and specific information.

1. Data Analysis using techniques such as:

* Root cause analysis which investigates potential causes of identified issues to uncover underlying risks. This helps identify risks that may not be immediately obvious but are critical to the project’s success.
* Assumptions analysis which uses the project assumptions to identify risks associated with any uncertain or unverified assumptions that might impact project outcomes if they prove false.
* SWOT analysis identifies risks by evaluating the project’s strengths, weaknesses, opportunities, and threats. This helps uncover both positive and negative risks that could impact the project.

1. Interpersonal and team skills such as facilitation. Through skilled facilitation, teams can develop accurate and clear risk descriptions.
2. Prompt lists use pre-established lists of potential risk sources, categories, or project characteristics to prompt discussion and ensure all areas are considered. These lists can be industry-specific or based on past project experiences.
3. Meetings with the project team and risk experts.

The outputs for the Identify Risks process involves systematically documenting potential events or conditions that could negatively impact the project's objectives. These typically include:

1. Risk Register which is a comprehensive document that lists all identified risks, along with relevant details such as risk description, causes, potential impacts, risk owner, and any initial risk response strategies. See chart 25 for a sample template of a risk register.
2. Risk Report which presents the sources of overall project risks including such factors as what the most important drivers of the risk exposure and summary information on individual project risks.
3. Project documents updates such as the assumptions log, issues log and lessons learned register. See Charts 26 and 27 for sample templates of the issues log and lessons learned register.

**Chart 25: Risk Register Template**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **RISK REGISTER** | | | | | | | | | |
| **ID** | **Date raised** | **Risk Description** | **Likelihood** | **Impact** | **Severity** | **Owner** | **Action** | **Progress on Action** | **Status** |
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**Chart 26: Issues Register Template**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ISSUES LOG** | | | | | | | | | |
| **ID** | **Date raised** | **Description** | **Type** | **Raised by** | **Report Author** | **Priority**  **[H/L/M]** | **Severity** | **Status**  **[Open/**  **Closed]** | **Closure Date** |
|  |  |  |  |  |  |  |  |  |  |
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**Chart 27: Lessons Learned Document (Note: own work)**

**Lessons Learned Register**

|  |  |  |
| --- | --- | --- |
| **Project Name:** | **Prepared By:** | **Date:** |
| **Project Manager:** | **Project Type:** | **Project Sponsor:** |

**PROJECT HIGHLIGHTS:**

|  |  |
| --- | --- |
| **Project Success** | **Factors that supported success** |
|  |  |
|  |  |
|  |  |

**SUMMARY OF LESSON LEARNED**

|  |
| --- |
| **Project Background:** |
|  |
| **Summary of Lessons Learned** |
|  |
| **Overall Recommendations** |
|  |

**TECHNICAL PERFORMANCE**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**SCHEDULE PERFORMANCE**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**COST PERFORMANCE**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**RISK MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**TEAM MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**STAKEHOLDER MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**COMMUNICATION MANAGEMENT**

|  |
| --- |
| **Project Experience** |
|  |
| **Recommended Process Improvements** |
|  |
| **Other Recommendations** |
|  |

**Approvals:**

Prepared By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Manager

Approved By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Sponsor

**4.8.3 Perform Qualitative Risk Analysis**

After identifying risks, the Project Manager would lead the team in prioritizing them based on their potential impact and probability, using tools like risk matrices or more advanced quantitative analysis techniques. He/She would also ensure the team understands how to categorize risks (e.g., threats, opportunities). The team members assigned to be the risk manager/coordinator would likely lead the qualitative risk analysis, such as conducting a risk assessment workshop to rate the risks. Subject-Matter Experts would provide insights into the potential impact and likelihood of each identified risk. And the other team members who have a more hands-on role may also provide a practical understanding of the severity of specific risks.

Perform Qualitative Risk Analysis is the process of assessing identified risks to prioritize them based on their likelihood of occurrence and potential impact on the project objectives. The goal is to focus attention on the most significant risks that could affect project success. This process is performed throughout the project. It draws from such inputs as:

1. Project management plan in particular the risk management plan.
2. Project documents such as the assumptions log, issues log, risk register and stakeholder register
3. Enterprise environmental factors which look at the external factors that can influence risk analysis and can help in identifying risks related to external or environmental influences on the project.
4. Organizational process assets which look at internal policies, historical data, lessons learned, and templates from previous projects. These assets provide valuable insights and guidelines for assessing risks based on past experiences.

Many of the tools and techniques used in this process help facilitate a structured evaluation to guide decision-making. Key tools and techniques include:

1. Expert judgement which draws from input and insights from subject matter experts, stakeholders, and experienced team members are used to assess risks. Their experience and knowledge help in determining the probability, impact, and urgency of risks, and in providing recommendations for response strategies.
2. Data gathering through interviews with stakeholders, subject matter experts, or team members helps gather qualitative insights into potential risks. These interviews provide a deeper understanding of risks from different perspectives, including those that might not be immediately obvious.
3. Data analysis techniques such as:

* Risk Data Quality Assessment which involves evaluating the quality and reliability of the data available about each identified risk. Poor-quality data may lead to incorrect assessments, so it’s important to assess how robust and credible the data is before prioritizing risks.
* Risk Probability and Impact Assessment: This technique involves evaluating each identified risk in terms of its probability of occurring and the potential impact it would have on the project's objectives (e.g., cost, schedule, scope, quality). Often, a scale (e.g., low, medium, high) is used to assess both probability and impact, and the combined results are used to prioritize risks. Chart 28 and 29 show examples of probability scale and impact scale.
* Assessment of other risk parameters such as urgency, proximity, dormancy, manageability, controllability, detectability, connectivity, strategic impact and propinquity.

**Chart 28: Probability Scale**

| **Scale** | **Probability Score** | **Definition** |
| --- | --- | --- |
| Very High | 0.90 | Highly likely to occur |
| High | 0.70 | Likely to occur |
| Medium | 0.50 | Possible to occur |
| Low | 0.30 | Unlikely to occur |
| Very Low | 0.10 | Highly unlikely to occur |

**Chart 29: Impact Scale**

| **Scale** | | **+/- Impact on Project Objectives** | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Very Low** | **Low** | **Moderate** | | **High** | **Very High** |
| **Impact Score/Percentage** | | 0.05 | 0.10 | | 0.20 | 0.40 | 0.80 |
| Project Objectives | Schedule | 2 to 3 days | 4 to 7days | | 8 to 14 days | 15 to 30 days | >30 days |
| Scope | Slight adjustment on scope | Minor scope change | | Major scope change | Unacceptable scope changes | Major scope rework |
| Quality | Minimal impact on consultancy performance | Minor impact on overall consultancy performance | | Some impact in consultancy performance | Significant impact on overall consultancy performance | Significant impact on overall consultancy performance |
| Cost | Minimal impact on cost of consultancy | Minor impact on overall cost of consultancy | | Some impact in cost of consultancy | Significant impact on overall cost of consultancy | Significant impact on overall cost consultancy |

1. Interpersonal and team skills
2. Risk categorization which involves grouping risks into categories (e.g., technical, external, organizational, project management) to organize and focus the analysis. Categorization helps ensure that no risk types are overlooked and enables identification of patterns or trends across different risk categories. Chart 30 is the risk breakdown structure for the project

**Chart 30: Risk Breakdown Structure**

| **Level 0** | **RBS Level 1** | **RBS Level 2** | **RBS Level 3** |
| --- | --- | --- | --- |
| 0. All Sources of Project Risk | 1 Technical Risk | 1.1 Scope definition | 1.1.1 Scope too broad for anticipated level of efforts. |
| 1.2 Requirements definition | 1.1.2 requirements not clearly defined |
| 1.3 Assumptions and constraints | 1.1.3 Insufficient government resources (human and data) to effectively participate in process |
| 2. Management Risk | 2.1 Project Management | 2.1.1 Inadequate team empowerment to make necessary decisions within their scope. |
| 2.2 Communication | 2.2.1 Inadequate communication within the team |
| 2.3 Stakeholder Management | 2.3.1 misalignment of stakeholder expectations due to inadequate communication. |
| 3 Commercial Risk | 3.1 contractual terms and conditions | 3.1.1 Breach of contract terms |
| 3.2 internal procurement | 3.2.2 Delays in internal procurement which impact project timelines |
| 3.3 Labor Market | 3.3.1 Unavailability of qualified local consultants to conduct assessments |
| 4 External Risk | 4.1 Organizational leadership | 4.1.1 Resistance/Non-cooperation of leadership to collaborate and provide necessary data for studies or participate in process. |
| 4.2 Data sourcing | 4.2.1 Inadequate or inaccessible data available for quantitative analysis |

(note: own work)

* Data representation which includes such techniques as the Probability and Impact Matrix which is a visual tool that categorizes risks based on their likelihood and impact. It typically uses a grid with probability on one axis and impact on the other, with each risk placed in the appropriate category. This helps in quickly identifying which risks are the most critical and require immediate attention.

**Figure 10: Example of a Probability and Impact Matrix**



Note: Reprinted from A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Sixth Edition. Project Management Institute (PMI), 2017 Figure 11- 15, p. 408. Copyright 2017 by PMI, Inc. Permission not sought.

**Probability and Impact Matrix Legend**

|  |  |  |
| --- | --- | --- |
|  | High | Risk that can significantly impact the project |
|  | Medium | Risk that can moderately impact the project |
|  | Low | Risk that can minimally impact the project |

1. Meetings with the project team and risk experts to identify individual project risks.

The outputs of qualitative risk analysis help in focusing resources and efforts on the most critical risks, guiding the team in developing appropriate responses, and laying the foundation for quantitative risk analysis (if necessary). The key outputs of this process are the updated project documents which include but are not limited to such as the assumptions log, issues log, risk register, risk report.

**4.8.4 Perform Quantitative Risk Analysis**

Quantitative Risk Analysis is a process in project risk management that aims to numerically assess the impact of identified risks on project objectives, such as cost, schedule, and performance. Unlike qualitative analysis, which prioritizes risks based on their likelihood and impact in relative terms, quantitative analysis seeks to understand the extent of potential effects by using data and statistical models thereby providing a more precise view of uncertainties and supporting more effective planning and decision-making. For the purposes of this project, quantitative risk analysis was not necessary. However, we will still outline the inputs, tools and techniques and outputs required when carried out. The inputs for this process are drawn from previous risk management activities and project documents. Key inputs include:

1. Project management plan components such as the risk management plan, scope baseline, schedule baseline, and cost baseline.
2. Project documents such as the assumptions log, basis of estimates, cost estimates, cost forecasts, duration estimates, milestones list, resource requirement, risk register, risk report and schedule forecast.
3. Enterprise environmental factors provide a broader context that might affect project risks and their potential outcomes.
4. Organizational process assets which can provide a broader context that might affect project risks and their potential outcomes.

The tools and techniques used in the Quantitative Risk Analysis process help to numerically assess and model the potential impacts of identified risks on project objectives such as cost, schedule, and performance. These tools provide a more precise understanding of the likelihood and severity of risk outcomes. Key tools and techniques include: expert judgement, data gathering, interpersonal and team skills, representations of uncertainty, and data analysis (e.g. simulation, sensitivity analysis, decision tree analysis and influence diagrams). The outputs of the Quantitative Risk Analysis process provide the results of the numerical assessment of risks and their impact on project objectives (such as cost, schedule, and scope). These outputs help the project manager make informed decisions about risk responses and resource allocation. Key outputs may include updated project documents such as the risk report.

**4.8.5 Plan Risk Responses**

Plan Risk Responses is a process in project risk management aimed at developing options and actions to enhance opportunities and reduce threats to the project’s objectives. This process involves deciding how to respond to identified risks, whether through mitigation, avoidance, acceptance, or exploitation, and planning actions that align with the project’s risk tolerance and goals. The inputs to this process provide the necessary information to develop effective strategies for addressing identified risks, both threats and opportunities. These inputs are derived from earlier stages of risk management and key project documents such as:

1. Project management plan including subsidiary plans (e.g., scope, schedule, cost, quality, resources) that provide context for how risk responses will impact the project. The project management plan helps ensure that risk response strategies are consistent with overall project goals and constraints.
2. Project documents from other projects such as the lessons learned register, assumptions log, stakeholder register, and issues log which provide important context for identifying risks, understanding stakeholders' concerns, and learning from past projects. This information can influence the development of effective risk responses.
3. Enterprise Environmental Factors which can affect the feasibility of certain risk responses and may provide opportunities or constraints that influence risk management strategies.
4. Organizational Process Assets which help identify proven strategies for addressing similar risks and guide the development of effective responses.

The tools and techniques used in this process are designed to help project teams identify, evaluate, and develop strategies for addressing risks effectively. These tools support the creation of comprehensive and actionable responses to both threats (negative risks) and opportunities (positive risks). The key tools and techniques include:

1. Expert judgement which seeks input from subject matter experts, stakeholders, and experienced team members to help develop appropriate risk response strategies. Experts can provide insights based on their knowledge, past experiences, and industry best practices.
2. Data gathering techniques such as interviews with stakeholders or experts to gather specific input on how to best respond to risks, particularly when dealing with complex or high-impact risks.
3. Interpersonal and team skills such as facilitation to be able to solicit collaboration, negotiation, and communication techniques are essential for discussing and agreeing on the most appropriate risk responses. These skills help ensure that all stakeholders are aligned on the approach to managing risks and that necessary resources are allocated.
4. Strategies for threats:

* Escalation is recommended when the project team and sponsor agree that the threat is outside the scope of the project or that the proposed response exceeds the project manager’s authority. The threat is then escalated to the level that matches the objectives that would be affected.
* Avoidance which involves changing the project plan to eliminate a risk or protect the project objectives from its impact (e.g., modifying the scope, schedule, or resources).
* Transfer involves shifting the risk to a third party (e.g., outsourcing, insurance, or performance bonds).
* Mitigation involves taking steps to reduce the likelihood or impact of the risk (e.g., implementing more robust quality control measures).
* Acceptance involves acknowledging the risk and preparing for its occurrence without active intervention (e.g., accepting a certain level of risk or setting aside contingency reserves).

1. Strategies for Opportunities

* Escalation is recommended when the project team and sponsor agree that the opportunity is outside the scope of the project or that the proposed response exceeds the project manager’s authority. The opportunity is then escalated to the level that matches the objectives that would be affected.
* Exploitation is used to ensure that a positive risk (opportunity) is fully realized by removing barriers or enabling its occurrence.
* Sharing is used to partner with others to maximize the benefit from an opportunity (e.g., joint ventures or alliances).
* Enhancement is used to increase the probability or impact of a positive risk (e.g., allocating additional resources to accelerate an opportunity).
* Acceptance of the potential benefit and acting if the opportunity arises.

1. Contingent Response strategies as the name implies are used only if certain events occur. These strategies outline actions to take if a specific risk event happens, often triggered by predefined conditions or risk thresholds.
2. Strategies for overall project risk
3. Data analysis techniques such as alternatives analysis and cost-benefit analysis.
4. Decision making techniques which can include such methods as multicriteria decision making analysis.

The outputs of this process provide the detailed strategies and actions required for the project team to manage identified risks in the project. These outputs help ensure that risks are adequately addressed and that resources are allocated effectively to mitigate threats or exploit opportunities. The key outputs of this process include:

1. Change requests to the cost and schedule baselines or other components of the project management plan. Such change requests are processed for review and disposition through the Perform Integrated Change Control process previously discussed in section 4.3.6. A sample change request for and change log are shown in figure 31 and 32 below.
2. Updated project management plans which go through the change control process via a change request.
3. Updated project documents such as the assumptions log, cost forecasts, lessons learned register, project schedule, project team assignments, risk register, risk report, etc.

**Chart 31: Change Request Form**

|  |  |  |  |
| --- | --- | --- | --- |
| **Change Request Form** | | | |
| **Project Name** | [insert project name] | **Requested by** | [insert name and position of person requesting change] |
| **Date of Request** | [day/month/year] | **Change Number** | [change number reference] |
| **Description of Change** | | | |
| [insert description of change being requested] | | | |
|
| **Impact of Change:** | | | |
| |  |  |  | | --- | --- | --- | | Cost | Resource | Scope | | Quality | Schedule | Project Status | | | | |
| **Reason for Change Request** | | | |
| [justification for change request] | | | |
|
| **Expected Effect on Deliverables** | | | |
| [description of impact on deliverables] | | | |
|
| **Expected Effect on the Timeline** | | | |
| [description of impact on project schedule/timeline, if applicable] | | | |
|
| **Expected Cost of Change** | | | |
| **Original Budget** | | | |
| **Revised Budget** | | | |
| **Funds Available** |  | **Source of Funds** |  |
| **Status:** | | | |
| **Received On** | [change request date] | **Approved by** | [name, position of approver] |
| **Approved (Yes / No)** |  | **Approved on** | [day/month/year] |

Note: Own Work

**Chart 32: Change Log**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Change Log** | | | | | | |
| **Project Name** |  | | | **Updated On:** |  | |
| **Version No.** |  | | | **Review Date:** |  | |
|  | | | | | | |
| **Change No.** | **Change Request** | **Requested By:** | **Date of Request** | **Impact**  **(High/Med./Low)** | **Status** | **Comments** |
| **1** |  |  |  | **High** | **In Process** |  |
| **2** |  |  |  | **Medium** | **Approved** |  |
| **3** |  |  |  | **Low** | **Denied** |  |
| **4** |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |
| **6** |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |

Note: own work

**Chart 33: Template for Assumptions Log**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ASSUMPTIONS LOG** | | | | | | |
| **PROJECT** |  |  |  |  | **DATE** |  |
| **ID** | **Category** | **Assumption** | **Responsibility** | **Due Date** | **Status** | **Actions/Comments** |
| 001 | Planning/Execution | All project resources remain available throughout the project life cycle | Project Manager | XX/XX/XXXX | Open | Project Manager to mee with Consultant(s) on XX/XX/XXXX to discuss this matter |
| 002 | Scope | Project scope will not deviate significantly | Project Manager | XX/XX/XXXX | Open | Project Manager, project team and project sponsor will meet on XX/XX/XXXX to discuss this topic |
| 003 |  |  |  |  |  |  |
| 004 |  |  |  |  |  |  |
| 005 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

**4.8.6 Implement Risk Responses**

The Implement Risk Responses process in project risk management involves executing the planned risk responses to address identified risks. This process focuses on ensuring that the strategies developed in the Plan Risk Responses phase are effectively carried out to mitigate threats and exploit opportunities, thereby reducing risk exposure and improving the likelihood of project success. Its inputs are drawn from the project management plan, in particular the risk management plan, project documents such as the lessons learned register, risk register and risk report and the organizational process assets. The Project Manager would ensure that the risk management process is continually monitored and updated throughout the project lifecycle. This includes tracking the status of risk responses, managing new risks, and making adjustments as needed. The project team members roles would include the Risk Manager would be responsible for maintaining the risk register, ensuring risks are regularly reviewed and that new risks are captured. Other project team members would be required to monitor their specific areas for new risks and report any changes to the risk status, especially if risks have materialized.

Stakeholders may be updated regularly on major risks and their mitigation plans. The key activities within this process can be summarized by the following flow chart shown in Figure 11.

**Figure 11: Flow Chart of Activities to Implement Project Risk Responses**

(Note: own work)

The tools and techniques used in the Implement Risk Responses process facilitate the successful implementation, monitoring, and adjustment of risk responses to help ensure that the planned risk responses are effectively executed and that risks are actively managed throughout the project. These include: expert judgment, interpersonal and team skills such (especially collaboration, communications, and negotiation), and a project management information system (MS Project) which can help monitor risk events, provide updates on the status of risk responses, and facilitate communication across teams, as well as assist in documenting changes to project plans, tracking the usage of contingency reserves, and generating reports on the effectiveness of risk responses.

The outputs of this process help track the effectiveness of risk management efforts, ensure proper documentation, and facilitate necessary adjustments and reflect the results of executing the planned risk responses and the impact of those actions on the project. The key outputs of this process include change requests and updated project documents such as the issues log, lessons learned register, project team assignments, risk register, risk report etc.

**4.8.7 Monitor Risks**

The Monitor Risks process in project risk management involves tracking identified risks, evaluating the effectiveness of risk responses, and identifying new risks that may arise throughout the project lifecycle using the agreed upon risk response plans. The goal of this process is to ensure that risk management efforts are effective, risks are managed proactively, and any changes in the project’s risk profile are addressed in a timely manner.

The main inputs for this process are drawn from the following documents:

1. Project management plan, specifically the risk management plan which provides guidelines for how risks will be monitored, the tools and techniques to be used, the frequency of risk reviews, and the roles and responsibilities for risk management.
2. Project documents such as the issues log, lessons learned register, risk register, risk report etc.
3. Work performance data which includes raw data about project performance, such as progress reports, actual versus planned schedule and cost data, and quality metrics. This data is critical in monitoring the effectiveness of risk responses and identifying any discrepancies between actual and planned performance, which may indicate the emergence of new risks or the failure of current risk responses.
4. Work performance reports which are regular evaluations of the project's progress, which include a focus on the status of risks and their responses. These reviews help identify areas where risk management efforts need to be adjusted or where additional risks need to be addressed.

The tools and techniques for the Monitor Risks process are designed to help the project team track identified risks, assess the effectiveness of risk responses, and identify new risks that may emerge during the project lifecycle. These tools and techniques help ensure that risks are actively managed, and that the project's risk profile is continuously evaluated and updated. The key tools and techniques used in this process are:

1. Data analysis techniques which include:

* technical performance analysis which is used to identify technical risks, such as performance shortfalls or unmet requirements, that may impact project success. It measures actual technical performance of the project against predefined criteria or specifications (e.g., quality, functionality, safety).
* Reserve analysis is used to track reserve usage and ensure there are enough resources to address potential risks if they occur. It reviews the use of contingency reserves (time or budget) to ensure they are adequate to cover potential risks, and evaluates whether additional reserves are needed.

1. Audits are used to assess the effectiveness of the risk management process and identify areas for improvement, evaluating how effectively risk responses have been implemented and whether they are achieving the desired outcomes.
2. Meetings are used to do risk reviews. These should be regularly scheduled and examine and document the effectiveness of risk responses in dealing with the overall project risk.

The outputs of this process show the results of tracking, reassessing, and updating risk management efforts throughout the project lifecycle. These outputs include:

1. Work performance information
2. Change requests
3. Updates to project management plan (as required), e.g., schedule, budget, and resource adjustments
4. Updates to project documents (as required) such as the Risk Register (e.g., new risks, changes in risk status, effectiveness of responses), the Issue Log (tracking issues caused by risks), the Risk Report (summarizing risk management activities), Lessons Learned (capturing insights for future projects)
5. Updates to organizational process assets could include templates for the risk management plan, risk register, risk report, risk breakdown structure, etc.

# 4.9 Communications Management Plan

Communication is the exchange of information. This exchange can be intended or involuntary and uses different mechanisms. Communication can be formal or informal, written, spoken, communicated through body language and gestures, or using different mediums which include voice/video, etc. Projects are not carried out in isolation as a solitary activity but require the inputs of various people and groups who communicate with each other in a variety of ways. Throughout the project, the Project Manager will spend most of their time communicating with stakeholders who have different cultural and organizational backgrounds, and bring different levels of expertise, interests and perspectives to the table. He/She will need to be in close communication not just with internal stakeholders such as the project team, sponsor, project steering committee, etc, but with a wide range of stakeholders who have different logical and emotionally feelings towards the project. The communication management is the process for how to keep everyone in the loop, ensuring that the right information is communicated at the right time in an effective way.

**4.9.1 Plan Communication Management**

The plan communications process concerns defining the types of information that will be delivered to whom, in what format for communicating it, and at what time to ensure its release and distribution meets intended or expected milestones. For internal stakeholders, the Project Manager will draw guidance from the project charter, various project management plans and documents, enterprise environmental factors, and organizational process assets to define the types of information the project will deliver, who will receive it, the format for communicating it, and the timing of its release and distribution. By doing this, we can delineate the guidelines that should be followed during the execution of the project activities, and while monitoring and controlling them. This provides direction based on the information needs of each stakeholder, available organizational assets, and the needs of the project.

Using various tools and techniques, the output of this process is a communication plan which documents the types of information needs the stakeholders have, when the information should be distributed, how the information will be delivered with which frequency, who will receive it, and the format and technologies we will use to communicate. Typically, this plan will be produced early during the project when stakeholders are identified and the project management plans are developed.

**Chart 34: Communication Type and Communication Methods/Artifacts**

| **Communication Type** | **Communication Method/Artifacts** |
| --- | --- |
| Interactive communication | • Phone Calls  • Videoconferencing: Zoom, Microsoft Teams, Google Meet  • Meetings: face to face, virtual or hybrid  • Workshops or Brainstorming Sessions  • Focus Groups  • Instant Messaging/Chat Platforms: WhatsApp  • Presentations |
| Push communication | • Letters  • Reports  • Emails  • Press Releases |
| Pull communication | * + Sharepoint Intranet   + Google Drive   + Enterprise MS Project   + Lessons learned database |

Note: Own work

For this project, ICT technology is heavily utilized for quick and easy dissemination of information and interactive communication. This technology easily facilitates synchronous and asynchronous communication. Since the organization uses green office practices, much of the information is collected, stored and disseminated electronically to minimize the environmental footprint as well providing overall cost savings benefits. As many of the direct external stakeholders also use similar platforms, it was not necessary to invest in software licensing or any hard infrastructure to facilitate most of the communication needs.

The project team used a communication matrix as an assessment tool to help them easily summarize the communication status, progress, and unique needs of any of the key stakeholders. Chart 35 summarizes the communication matrix used for the project.

**Chart 35: Communication Matrix**

| **Communication Type** | **Purpose/Objectives** | **Audience** | **Medium** | **Frequency** | **Owner/**  **Responsibility** |
| --- | --- | --- | --- | --- | --- |
| Project Kick-Off Meeting | Introduce the project goals, scope and objectives.  Introduce the project team and their roles.  Establish stakeholder expectations and their roles and responsibilities.  Establish communication channels.  Outlining major project milestones, deadlines, and the project schedule to provide a clear roadmap for the team. | Project Team  Project Sponsor  Project Steering Committee  Main Stakeholders | Face-to-Face meetings | Once | Project Manager |
| Project Team Meetings | Review weekly project status.  Review project timeline.  Discuss any obstacles or project risks. | Project Team | Face-to-Face meetings  Conference Call | Weekly | Project Manager |
| Technical Meetings | Discussion and review of technical studies. | Technical Project Team  Key experts | Face-to-Face meetings  Conference Call  Intranet | As needed | Project Manager |
| Project Status Meetings | Discuss project overall status, action log and progress  Discuss risks, issues and mitigation.  Engage stakeholders to participate, ask questions, and offer input or feedback on the project’s progress. | Project Team  Project Sponsor  Project Steering Committee  Main Stakeholders | Face-to-Face meetings  Conference Call  Hybrid | Monthly | Project Manager |
| Project Steering Committee (PSC) Meetings | Discuss project alignment.  Review project risk and mitigation strategies.  Address issues escalation and discuss resolution strategies.  Milestone review and project progress.  Review and approve changes.  Review Key Performance Indicators (KPIs) and metrics to ensure project criteria are met.  Provide feedback on priorities, Budget and overall status. | Project Steering Committee | Face-to-Face meetings  Web portals  Intranet | Monthly or as needed | Project Manager |
| Community and Sector Outreach | Engage and inform local communities and special interest groups (fishing and tourism) | Residents of underserved communities  Indirect Stakeholders | Face-to-Face meetings | As needed | Project Manager |
| Project Status Reports | Provide report on project status, achieved milestones, task status.  Provide report on Key Performance Indicators (KPIs) such as cost, schedule, quality performance.  Provide report on identified risks and issues along with their impact and mitigation strategies. | Project Team  Project Sponsor  Project Steering Committee  Main Stakeholders | Email  Web portals  Intranet | Monthly | Project Manager |
| Technical Reports | Provide progress on technical aspects of the project | Project Team | Email  Web portals  Intranet | Weekly | Technical Lead  Consultants |
| Consultancy Progress Meetings | Coordinate tasks between consultants and project team.  Track and discuss progress & address any challenges. | Project Team  Consultants | Face-to-Face meetings  Conference Call | Bi-weekly | Project Manager |
| Presentations | Discuss project updates and other project information. | Project Sponsor  Project Steering Committee  Project Team  Indirect Stakeholders | Face-to-Face meetings  Conference Call  Hybrid | Monthly | Project Manager |
| Presentations | Public awareness about project findings | Direct and Indirect Stakeholders | Mass Communication  Press release  Social Media networks | As needed | Project Manager |

Note: own work

**4.9.2 Manage Communication**

The PMI PMBOK Guide 2017 defines manage communication as the process of ensuring timely and appropriate collection, creation, distribution, storage, retrieval, management, monitoring and the ultimate disposition of project information. This process is performed throughout the project life cycle and ensures that information flows between the project team and its stakeholders.

As part of the communication management plan, a protocol that outlines all the critical communication channels for the team and stakeholders should be developed. This could include but not be limited to elements such as: the purpose of communication, ICTs utilized, frequency of communications, and types of information to be communicated. Chart 36 below summarizes the communications management protocols for the project.

**Chart 36: Communications Management Protocol**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Purpose of Communication** | **Schedule Frequency** | **ICTs or Other Means Utilized** | **Types of Information** | **Participants: Team Members and Stakeholders** |
| Planning | Every week on Monday | Microsoft Teams  Zoom  OneDrive  Emails | Requirements  Project activities  Schedule  Cost  Risks and issues | All the team members |
| Retrospective | Every week on Thursday | Microsoft Teams  Zoom  OneDrive  Emails | Status updates  Lessons learned | All the team members |
| Emergency | As needed | Zoom or In-person | Depends on the reason for emergency | All the team members |
| Status updates | Every week after the retrospective meeting  Or as needed | Emails  Zoom or In-person meetings | Progress report  Tracking Gantt Chart  Comparison of baselines with the latest situation | All the team members, Project sponsor |

**4.9.3 Monitor Communications**

The monitor communications process ensures that information needs of the project and stakeholders are met. Monitoring the communication process is needed to identify and resolve any issues early on, improve collaboration, and ensure all stakeholders are on the same page. It can also help prevent miscommunication, and misunderstandings, and reduce the risk of project failure.

Before we can monitor the communication plan, the project manager and team would have to define the communication plan. This includes clearly defining the purpose, frequency, and format of all communication activities. Next, the communication channels established to ensure that all stakeholders have a clear understanding of how they can communicate with each other. With these in place, the project manager is then able to monitor the communication plan through the following activities:

1. Track communication which includes all activities, including emails, meetings, and project updates, to get a comprehensive understanding of the communication process. This is to ensure that the communication plan is being followed.
2. Monitor feedback from stakeholders to ensure that the communication process is working as expected. This includes all communication activities, including meetings, status reports, and email communications, to ensure that they are carried out effectively and in a timely manner.
3. Analyze communication metrics including response time and feedback quality, to identify any areas for improvement. This includes all stakeholders taking actions if necessary to improve communications if needed.
4. Track and address issues arising from any communication-related issues that come up during the project to ensure efficient and effective communication. Chart 37 summarizes how issues are managed and escalated for resolution. Chart 38 describes how issues are prioritized once identified along with the timeframe for resolution.
5. Regularly evaluate communication process to ensure it remains effective and to identify areas for improvement.
6. Adjust communication plan as needed to ensure that the communication process remains efficient and effective throughout the project, updating the communication plan and other relevant project documents where necessary.
7. Use communication tools and techniques such as project management software, issue tracking systems, and feedback surveys, to monitor the communication process effectively.
8. Continue to communicate regularly with stakeholdersincluding project team members, customers, and stakeholders, to ensure that everyone is informed and updated on the project’s progress and any communication-related issues.

**4.9.3.1 Communication Escalation Process**

**Chart 37: Steps for Issue Management for the Communication Escalation Process**

| **Step** | **Action** | **Description** |
| --- | --- | --- |
| 1 | Identify and Document Issues | Recognize and document the challenges or discrepancies within the project. The project manager and team or any stakeholders can raise issues. Communication issues are documented in detail including its impact, triggers, and any attempted resolution. |
| 2 | Review of Issues | Assess the identified communication issues, evaluating their severity, impact on the project objectives, and potential risks associated, and determining the urgency for resolution. |
| 3 | Communication of Issues | Notify relevant stakeholders and team members, about the identified communication challenges. Provide comprehensive details and impact assessment. |
| 4 | Escalate Issues | Follow the project’s escalation path presented in to escalate unresolved or critical communication issues. |
| 5 | Issue Resolution | Work towards resolving the escalated communication challenges. |

(Note: own work)

**Chart 38: Communication Escalation Matrix**

| **Priority Level** | **Definition** | **Decision Authority** | **Timeframe for Resolution** |
| --- | --- | --- | --- |
| Priority 1 | Critical and urgent impact on project scope, schedule, or budget. It poses immediate and significant threats to the project success, viability, or compliance. Urgent action is required to prevent substantial setbacks or failure. | Project Steering Committee (PSC) | Within 24 hours |
| Priority 2 | Medium impact to the project scope, schedule, or budget. If not addressed promptly, it could lead to notable disruptions, delays, or deviations if unresolved. | Project Sponsor | Within 1-2 days |
| Priority 3 | Minor impact to the scope, schedule, or budget. It requires attention to ensure adherence to the established project objectives. These issues, if unattended, could lead to minor impacts on the project outcomes or efficiency. | Project Management Office (PMO) Manager | Within 2-3 days |
| Priority 4 | Insignificant impact to the scope, schedule, or budget. It does not pose immediate risks or threats but contributes to the ongoing project monitoring. | Project Manager | As needed |

Note: own work

# 4.10. Stakeholder Management Plan

A stakeholder is any individual, group or organization that can be impacted negatively or positively by the project. These stakeholders may be internal or external. Every project has stakeholders who have varying interests and expectations and can influence the work or outcomes to different degrees. Therefore, it is important that project managers identify key stakeholders, expanding even beyond traditional categories, striking a balance between the competing views to ensure that their influence does not unduly change the complexity of the management tasks which would jeopardise costs. Similarly, project managers need to manage stakeholder involvement to ensure that the project’s benefits are maximised, deliver optimal value and satisfaction for stakeholders.

Project Stakeholder Management includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyse stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution. (PMI, 2017, p. 503) This includes four processes: identify stakeholders, plan stakeholder engagement, manage stakeholder engagement and monitor stakeholder engagement. The project manager must tailor the way these processes are applied taking into consideration the stakeholder diversity, complexity of stakeholder relationships and communication technology.

## 4.9.1 Identify Stakeholders

The first step in developing a stakeholder management plan is identifying all stakeholders. This is done at the initiation stage and includes documenting stakeholder interests, interdependencies, influence and potential impacts on the project success. However, this is revisited at different parts of the project cycle. If stakeholders are not identified properly, the project and its outcomes cannot address all the stakeholders’ expectations and concerns.

The Project Manager will draw information from the project charter, business documents such as the business case and business management plan, agreements, enterprise environmental factors, organizational process assets, and once developed project management plans such as the communication management plan and stakeholder engagement plan, and other project documents such as the change log, issues log, requirements documentation. This step is critical as it enables the project manager and team to develop appropriate engagement strategies for each group of stakeholders identified.

For this project, the following tools were used: expert judgement drawing from knowledge of political and power structures from key stakeholder organizations and the type of environment impacted/influenced, data gathering, data analysis, data representation through stakeholder mapping and meetings. The information gathered was used to build a stakeholder register, update various project management plans such as the communications management plan, stakeholder engagement plan, risk management plan, and update project documents such as the assumptions log, issues log, and risk register.

## 4.9.2 Plan Stakeholder Engagement

The Project Manager is responsible for developing a rigorous stakeholder engagement campaign. The project manager needs to be able to build trust, and ultimately influence stakeholders. To this, he/she must identify any threats that exist, and create mitigation plans against them. As such, a detailed engagement plan should be created for each group of stakeholders identified including the minor stakeholders. To do this, the project manager will determine the key messaging which will be communicated, and the modalities for doing so. Chart 35 summarizes how to select appropriate communication mediums based on the strategic positioning. A narrative would be built which evolves to become more specific as the stakeholders’ attitudes shift.

**4.9.2.1 Stakeholder Engagement Assessment Matrix**

Having mapped the project’s power/interest matrix, the Project Manager now needs to understand the gaps between the current level of engagement with those stakeholders versus the desired engagement levels for a successful project. This can be done through a stakeholder engagement assessment matrix. In this matrix, the Project Management Institute (PMI), 2017 (p. 521) classifies stakeholders as one the following five categories:

* *Unaware*: unaware of the project and potential impacts.
* *Resistant*: Aware of the project and potential impacts but resistant to any changes that may occur as a result of the work or outcomes of the project. These stakeholders will be unsupportive of the work or outcomes of the project.
* *Neutral*: Aware of the project, but neither supportive nor unsupportive.
* *Supportive*: Aware of the project and potential impacts and supportive of the work and its outcomes
* *Leading*: Aware of the project and potential impacts and actively engaged in ensuring that the project is a success.

Having previously mapped out stakeholder power/interests, we can summarize them into four stakeholder groups. These are:

* High interest and high influence/power. These are your stakeholders from your “leading” or “supporting” category. They are the project’s key players and the most important on the stakeholder list. The project manager should check in with these stakeholders regularly and thoroughly educate them about the project. These are the stakeholders that are most important to have on board.
* High interest and low influence/power. These stakeholders also likely come from the “leading” or “supporting” categories. While they don’t have as much influence, they should still be kept in the loop on all major communication and encouraged to participate in other ways depending on the situation. Project management tools can be used to keep high interest stakeholders in the loop without added effort.
* High influence/power and low interest. These stakeholders can come from the “neutral” or “resistant” categories, and education is critical to keep them on board. They can become more resistant if they're surprised by a project change, so the project manager/team should ensure that they have access to information when needed, and inform them of any work that might impact the project.
* Low influence/power and low interest. These are stakeholders from the “unaware” category. This stakeholder group does not need to be contacted often. However, various project management tools should be used to send out regular updates thereby providing key project details, along with information on how these stakeholders can have the opportunity to get more involved.

Chart 39 shows the stakeholder engagement matrix for the project. In the table, C represents the current engagement and D indicates the desired engagement level to achieve project success.

**Chart 39: Stakeholder Engagement Assessment Matrix**

| **ID** | **Stakeholder** | **Unaware** | **Resistant** | **Neutral** | **Supportive** | **Leading** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Project Sponsor |  |  |  |  | C,D |
| 2 | Project Manager |  |  |  |  | C,D |
| 3 | Project Team |  |  |  |  | C,D |
| 4 | Blue Bond Finance Permanence Unit |  |  |  |  | C,D |
| 5 | Belize Forest Dept. |  |  |  | C | D |
| 6 | Belize Fisheries Dept |  |  |  | C | D |
| 7 | Belize Coast Guard |  |  |  | C | D |
| 8 | Belize Police Dept. |  |  | C |  | D |
| 9 | Belize Port Authority |  |  | C |  | D |
| 10 | Project Consultants | C |  |  | D |  |
| 11 | Members of the Judiciary |  |  | C | D |  |
| 12 | Tourism sector stakeholders | C |  |  | D |  |
| 13 | Fisher Associations | C |  |  | D |  |
| 14 | Community members | C |  |  | D |  |
| 15 | PSC |  |  |  | C | D |
| 16 | NGO Co-Managing PA Managers |  |  |  |  | C,D |

**Chart 40: Stakeholder Engagement Campaign**

A screenshot of a computer

Description automatically generated

Source: Clayton, M. (2024, August 26). *How to plan an effective stakeholder engagement campaign*. OnlinePMCourses.

**4.9.2.2 Stakeholder Engagement Plan**

The output of the plan stakeholder engagement is the stakeholder engagement plan. This plan documents how involved and influential your project stakeholders are, outlines all the strategies and actions required to involve various stakeholders in decision making and project execution. The goal of the stakeholder engagement plan is to identify the stakeholder’s goals or motives as well as the communication methods which will be used with them, including how much information will be shared. Drawing from the stakeholder analysis, the stakeholder engagement plan may include but is not limited to stakeholder name, interest level, influence level, communication frequency, communication channel approach, information to be delivered to the stakeholder, etc.

## 4.9.3 Manage Stakeholder Engagement

During the manage stakeholder engagement the project manager and team communicate and work with stakeholders to engage them, thereby meeting their expectations and address any issues which arise. This minimizes stakeholder resistance and increases the chances of project success.

In this project, the Project Manager and team will utilize the stakeholder engagement plan which would have outlined which stakeholders, how and why to engage them to ensure their continued participation and commitment to the project’s success. Stakeholder expectations would be managed through communication and negotiation. Any issues which arise would be clarified, resolved wherever possible and/or managed to minimize future negative impacts. Therefore, the project manager must have a variety of hard and soft skills. Tools and techniques such as expert judgement, communication skills, interpersonal and team skills, ground rules and meetings are critical.

Outputs produced would be documented and if necessary documented through change requests, project management plans such as the communication management and stakeholder engagement plan, as well as other project documents such as the change log, issue log, lessons learned register and stakeholder register.

## 4.9.4 Monitor Stakeholder Engagement

Project Managers must monitor stakeholder engagement through the monitor stakeholder engagement process. This involves continuously monitoring the stakeholder relationships and their active engagement in the processes enacted through the stakeholder engagement plan to ensure that agreed upon activities and protocols are being followed and updating the engagement strategies where necessary. Inputs can be drawn from various project management plans and project documents, work performance data, enterprise environmental factors and organizational process assets. During this process, similar tools and techniques are utilized in the manage stakeholder engagement process. Additionally, various decision-making techniques can be utilized to resolve decisions which arise. Because this process revolves around people, a good project manager must have highly developed interpersonal and leadership skills, paired with cultural and political awareness, as well as networking capabilities.

# 4.11. Procurement Management Plan

Procurement management includes the processes necessary to purchase or acquire products, services or results needed from outside the project team. It ensures a project has the necessary resources at the right time, quality, and cost. Project Procurement Management includes the management and control processes required to develop and administer agreements such as contracts, purchase orders, memoranda of agreements (MOAs), or internal service level agreements (SLAs). The project procurement management has three main processes: plan procurement management, conduct procurements and control procurements. In this project, the procurement function is mainly carried out by a Procurement Officer who is a part of the project team. The Project Manager works with the Procurement Officer to ensure that the procurement activities are guided by the project schedule and based on the most up to date procurement plan document. Wherever possible, suppliers who comply with sustainability criteria are utilized.

**4.11.1 Plan Procurement Management**

The plan procurement management process involves documenting the project’s procurement decisions including specifying the approach, setting budget constraints and financial scope, creating criteria for vendor selection, assigning roles and responsibilities to stakeholders, considering the risk factors, and developing a procurement plan.

This project involves simple procurement processes involving consultancy services, non-consulting services such as event management services, and provision of event management services and publication services, as well as the purchase of goods for the project office like laptops and printer for staff, etc. Chart 13 shows the process for selecting an appropriate vendor/supplier/consultant. Chart 41 summarizes the project’s simplified procurement plan. Based on the World Wildlife Fund’s organizational process assets, the project team would utilize existing preapproved seller lists (where they exist) and comply with internal procurement policies, procedures and guidelines. Similarly, the contract templates would be based on WWF’s contract types and structures. For the purposes of this project, contracts would be issued only for the consulting services and the event management services. In the case of the goods purchases, all would be procured using the shopping method using least cost selection.

**Figure 12: Procurement Process for Source Selection Analysis**

Note: Own work

**4.11.2 Conduct Procurements**

Conduct procurement is the part of the procurement process where responses (bids/quotes/etc.) are obtained from potential suppliers/sellers, evaluated and a supplier/seller selected and awarded the contract/sale. Effective procurement management involves coordination between cross-functional teams such as finance, legal, purchasing and other parts of the organization. The Project Manager often leads the procurement activities while collaborating with the various internal stakeholders just described.

The Project Manager would also consult with different project documents which would guide different processes. For instance, the overall scope management plan would describe how the overall scope of work will be managed, while the communications management plan would describe how communications between different stakeholders (in this case the project and sellers/project team) will be conducted. The procurement management plan contains all the procurement activities to be undertaken. Project documents like the Lessons Learned Register, Project Schedule, Stakeholder register, and requirements documentation can provide inputs for the various procurement processes to be undertaken.

The procurement documentation which would be used for contract agreements include source selection criteria, any bidding documents such as the request for proposals, or request for quotations. The project team may even seek out independent cost estimates for similar work to be as a gauge on the reasonableness of the proposals submitted by consultants/vendors/suppliers.

**4.11.2.1 Procurement Process**

During this project, the Project Manager will be conducting several types of procurement activities including consulting services, non-consulting services and goods. The budget, type of procurement, procurement method, entity responsible for the procurement etc are all detailed in the procurement plan. For the consulting services terms of reference will be drafted. The Project Manager will consult with internal and external technical experts to develop terms of reference, evaluation criteria and research to understand the availability of suitable consultants for the scope of work to be undertaken. Once the terms of reference have been finalized, it will be advertised through appropriate mediums to ensure wide distribution among target audiences inviting suitably qualified consultants to submit technical and financial proposals for the scope of work. A conference will be held to clarify any concerns or questions which potential consultants may have regarding the scope of work prior to the submission of technical and financial proposals. Proposals from suppliers/sellers include detailed information on how they can meet the procurement needs, schedule, cost, approach etc. Once proposals have been received and evaluated, negotiations will be held with the top candidate, or subsequently ranked candidates such the first negotiation fail. Upon finalization of the negotiations, contract will be awarded, agreements will be drafted and signed. The selection of the top ranked are usually based on criteria such as technical capabilities, cost, quality and management approach, etc.

In the case of non-consulting services, specifications will be developed for the scope of work required. These specifications will be issued to suppliers for receipt of proposals. Based on the selection criteria, the best proposal will be selected, agreement drafted and awarded.

In the case of goods, technical specifications will be developed and issued to vendors. Quotations will be obtained. Depending of the total value of the goods to be obtained, purchase orders may be used, or contracts awarded to the supplier. There were no instances which required make or buy analysis for this project.

Since all of the procurements required for this project are relatively simple and low risk or even routine, there would not be many implications for the requirements traceability matrix, risk register or stakeholder register. The outcomes of activities such as the consultancy and event management contract may flag issues which would need to be documented in the lessons learned register. Possible lessons could be noted in relation to source selection analysis, data gathering and data analysis etc.

**4.11.3 Change Requests**

Any changes which arise would be reviewed and process using the perform integrated change control process. This includes changes requested to signed agreements with vendors/suppliers/consultants Similarly, if there are any modifications which result in changes to project management plans, subsidiary plans or their respective components. Such plans could include but not be limited to the:

* Procurement management plan
* Scope baseline
* Schedule baseline
* Cost baseline
* Lessons learned register
* Stakeholder register
* Requirements documentation.

**Chart 41: Project Procurement Management Plan**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Consulting Services** | | | | | | | |
| **Activity** | **Procurement Method** | **Process Number** | **Estimate Budget** | **Associated Component** | **Start Date** | **End Date** | **Status** |
| Environmental Enforcement Assessment | Comparison of Qualifications – National Consultant | 1.1 | $50,000 | 1 | June 2024 | Dec. 2024 | Not started |
| **Non-Consulting Services** | | | | | | | |
| **Activity** | **Procurement Method** | **Process Number** | **Estimate Budget** | **Associated Component** | **Start Date** | **End Date** | **Status** |
| Event management services | Selection based on the consultant’s qualifications | 1.3.1 | $20,000 | 1 | August 2024 | October 2024 | Not started |
| Printing Services | Shopping | 1.3.2 | $2,500 | 1 | June 2024 | October 2024 | Not started |
| **Goods** | | | | | | | |
| **Activity** | **Procurement Method** | **Process Number** | **Estimate Budget** | **Associated Component** | **Start Date** | **End Date** | **Status** |
| Printer | Shopping | 1.4 | $10,000 | 2 | June 2024 | June  2024 | Not started |
| Laptops | Shopping | 1.4 | $10,000 | 2 | June 2024 | June 2024 | Not started |
| Projector and Screen | Shopping | 1.4 | $1,000 | 2 | June 2024 | June 2024 | Not started |
| Office Supplies | Shopping | 1.4 | $5,000 | 2 | June 2024 | June 2024 | Not started |

Note: Own work

**4.11.3 Control Procurements**

Control procurements is the process of managing procurement relationships: monitoring contract performance and making changes and corrections as appropriate; and closing out contracts (PMI, 2017, p. 492).

**4.11.3.1 Procurement Documentation**

It is important to ensure that all relevant supporting documents are kept for the complete administration of the procurement processes. These documents must be filed properly and readily available during and after project implementation to support other processes such as audits. This includes but is not limited to statements of work, payment information, correspondence between project/vendor about work performance, or any changes or matters requiring resolution, confirmation and acceptance of deliverables/supplies/materials.

During the control procurements process, the project manager will follow up to document procurement activities and vendor performance for the following:

* Work Performance Information – documentation will include the consultant/seller/vender’s performance against the state scope of work/terms of reference/etc or any of key performance indications to ensure that the required standards are met as per agreement’s specifications, timeline and scope.
* Scope verification and quality assurance - documentation that the procured goods or services align with the project's defined scope and requirements. There will be collaboration with stakeholders to ensure that procured items meet the specified quality standards and quality assurance checks.
* Risk management and issue resolution – documentation of any risks identified, assessed and recommendations for mitigation associated with procurement activities, such as supplier reliability, delivery delays, or quality issues.
* Communication and reporting – documentation through the various communication channels used with vendors, project team, and stakeholders, providing updates on the progress of procurement and any issues that require attention.
* Change management and contract closure - The project manager, along with the Legal Department will manage changes in the procurement requirements, scope adjustments, or modifications to contracts through the Change Request Process described in the Perform Integrated Change Control Process. All change requests will be made using the Change Request Form including a thorough assessment to understand the impacts of the change to the procurement management plan and other project documents. The project manager will perform the formal closure of contracts. In consultation with the project team, the project manager will confirm all deliverables are received, invoices are submitted, payments are settled, and any other administrative closure tasks are completed.

**Chart 42: Pre-Approved Sellers[[1]](#footnote-1) List**

|  |  |
| --- | --- |
| **Project Name:** | [insert project name] |
| **Project Start Date:** | [insert start date] |
| **Prepared By:** | [insert procurement specialist name] |
| **Date of Approval:** | [insert date] |

1. **Printing Services**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vendor Name** | **Contact Information** | **Qualifications/**  **Certifications** | **Products/Services**  **Provided** | **Terms/**  **Conditions** |
| The Angelus Press Limited | Email: [sales@santiagocastilloltd.com](mailto:sales@santiagocastilloltd.com)  Phone: +501-223-0777 | Accredited supplier – HP & DELL products | Printing: documents and banners, architectural drawings - color & black and white | Payment terms: Net 30 days |
| Print Shop | Email: [printing@printshopbelize.com](mailto:printing@printshopbelize.com)  Phone: 501-620-5245 |  | Printing: documents, business cards – color & Black and white | Payment terms: 50% deposit, 50% upon delivery |
| Aligraphics | Email:  [sales@aligraphics.com](mailto:sales@aligraphics.com)  Phone: +501-220-8978 |  | Printing: banners, signs, labels, marketing materials, t-shirts | Payment terms: 50% deposit, 50% upon delivery |
| Creative Marketing Ltd | Email:  [Sales@creativemarketing.com](mailto:Sales@creativemarketing.com)  Phone: +501-223-4545 |  | Printing: banners, signs, labels, marketing materials, t-shirts | Payment terms: 50% deposit, 50% upon delivery |

1. **Hotel Accommodations**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vendor Name** | **Contact Information** | **Qualifications/**  **Certifications** | **Products/Services**  **Provided** | **Terms/**  **Conditions** |
| Fort George Hotel and Marina | Email: [info@fghbelize.com](mailto:info@fghbelize.com)  Phone: +501-223-0045 | Sustainable practices  Conference facilities (12 – 150 people) | Hotel accommodations, restaurant, conference rooms, parking, marina services, catering and events management | Payment terms: Net 30 days |
| Golden Bay Hotel | Email: [info@goldenbay.com](mailto:info@goldenbay.com)  Phone: +501-223-5656 | Meeting room facilities (6 – 20 people) | Hotel accommodations, restaurant, meeting room facilities | Payment terms: 50% deposit, 50% upon delivery |
| Biltmore Best Western Hotel | Email: [info@bestwestern.com](mailto:info@bestwestern.com)  Phone: +501-226-2323 | Sustainable practices  Conference facilities (50 – 250 people) | Hotel accommodations, restaurant, conference rooms, parking, catering and events management | Payment terms: Net 30 days |

1. **Vehicle Rentals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vendor Name** | **Contact Information** | **Qualifications/**  **Certifications** | **Products/Services**  **Provided** | **Terms/**  **Conditions** |
| Euphrates Auto Rentals | Email:  [sales@euphratesbelize.com](mailto:sales@euphratesbelize.com)  Phone: +501-223-2008 |  | Car rentals (small cars and SUVs) | Payment terms: Net 30 days |
| Crystal Auto Rental | Email: [sales@crystalautorental.com](mailto:sales@crystalautorental.com)  Phone: +501-202-0205 |  | Car rentals (SUVs, vans, pickup trucks) | Payment terms: Net 15 days |

1. **Stationery and Office Supplies**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vendor Name** | **Contact Information** | **Qualifications/**  **Certifications** | **Products/Services**  **Provided** | **Terms/**  **Conditions** |
| The Angelus Press Limited | Email: |  |  | Payment terms: Net 30 days |
| A&R Ltd. |  |  |  | Payment terms: Net 30 days |
| Dakers Stationery & Books |  |  |  | Payment terms: Net 30 days |
| Stationery House Ltd. |  |  |  | Payment terms: Net 30 days |

1. **Computer Supplies and Equipment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vendor Name** | **Contact Information** | **Qualifications/**  **Certifications** | **Products/Services**  **Provided** | **Terms/**  **Conditions** |
| The Angelus Press Limited | Email: [sales@santiagocastilloltd.com](mailto:sales@santiagocastilloltd.com)  Phone: +501-223-0777 | Accredited supplier – HP & DELL products | Desktops, laptops, servers, printers, UPS, office supplies, office furniture, office equipment | Payment terms: Net 30 days |
| Fultec Systems | Email:  [sales@fultec.com](mailto:sales@fultec.com)  Phone: +501-222-2222 | Dell Platinum Partner, HP Amplify Power Partner, Microsoft Partner, and an APC Premier Partner | Desktops, laptops, servers, printers, POS Systems, Surveillance equipment, UPS  Computer sales, computer repairs, POS and surveillance installation and servicing | Payment terms: Net 30 days |

(Note: Own work)

# 4.12. Sustainable Development Plan

As an organization, WWF’s mission is to stop the degradation of our planet’s natural environment and build a future in which humans live in harmony with nature. In Belize, WWF Mesoamerica is leading the project as part of its work toward improving environmental enforcement, and by extension improving the effective management of protected areas in the country. Improved environmental enforcement can contribute to regenerative development by ensuring the protection and restoration of ecosystems, promoting sustainable use of natural resources, and building resilience against climate change. Through effective enforcement of laws related to land use, fisheries, waste management, and conservation, Belize can regenerate its environment, enhance community livelihoods, and ensure that economic development is aligned with environmental sustainability. By fostering a culture of compliance and sustainable practices, environmental enforcement serves as a cornerstone in achieving long-term, regenerative development for Belize.

Hence the inclusion of a sustainable development plan as part of the project’s integrated management plan ensures that the project considers the environmental, social, and economic impacts throughout its lifecycle. It integrates practices that minimize negative effects, maximize positive contributions, and ensure that the project delivers lasting benefits. Key components include environmental responsibility, community engagement, economic efficiency, and risk management, along with regular monitoring and collaboration with stakeholders. This approach helps in achieving long-term sustainability and contributes to responsible project execution.

**4.12.1 Identifying Sustainability Impacts**

As part of its operations, WWF has begun to implement sustainability measures throughout its operations by implementing green office practices. To further enhance its operations at a project level, the P5 Impact Analysis framework can be utilized. This framework is used to assess and identify the sustainability impacts of a project, program, or policy. It focuses on evaluating how different aspects of a project will affect People, Planet, and Prosperity, aiming to promote Sustainable Development. The "P5" refers to the five dimensions of sustainability that this analysis considers, helping organizations make informed decisions that align with sustainability goals.

**4.12.2 Responding to Sustainability Impacts**

The P5 Impact Analysis is a comprehensive tool that allows decision-makers to assess the sustainability of a project across multiple dimensions. Drawing from the GPM® P5TM Standard for Sustainability in Project Management (Version 3), as part of its operations the project manager, and by extension the project’s consultants and suppliers can ensure that the sustainability activities are done. By evaluating the social, environmental, economic, collaborative, and governance impacts, WWF can incorporate the following:

1. Identify positive and negative impacts relating to sustainability (benefits, risks and trade-offs).
2. Prioritize actions where the project will have the most significant impacts helps prioritize actions that can maximize positive outcomes and minimize negative effects.
3. Informed decision making by providing a structured approach for incorporating sustainability considerations into project planning, design, and execution, enabling better decisions that align with long-term sustainability goals.
4. Holistic view of sustainability ensuring that sustainability is not only about environmental preservation but also about social equity, economic resilience, partnership-building, and good governance.

**4.12.3 Roles and Responsibilities**

To ensure that sustainability is built into the project, the following table delineates the roles and responsibilities of key persons within the organization which will ensure its integration and execution.

**Chart 43: Roles and Responsibilities**

|  |  |
| --- | --- |
| **Role** | **Responsibility** |
| Project Manager | * Develop and update the P5 Impact Analysis (P5IA) with the support of the project team * Integrate sustainability activities and resources within the various project management plans wherever possible: e.g., procurement plan, communication plan, stakeholder engagement plan, etc. * Coordinate with the project team to ensure alignment of the project with P5IA * Organize training sessions which teach and encourage shared learning on P5IA implementation with internal and external stakeholders including other staff members and organizational partners (communities, government agencies and NGOs). * Incorporate lessons learned from sustainable development plan into lessons learned register with recommendations for continuous improvement of the sustainable development plan * Facilitate stakeholder engagement (including grievance redress mechanism) for feedback and concerns arising from environmental and social perspectives. |
| Project Team | * Collaborate in monitoring and reporting on sustainability KPIs * Advocate for and support the integration of sustainability practices within the project and organization. * Assist in identifying potential impacts and encourage/propose responses for reducing negative environmental impacts and increasing social benefits. * Participate in stakeholder engagement (including grievance redress mechanism) for feedback and concerns arising from environmental and social perspectives. |
| Consultant(s) | * Advocate for and support the integration of sustainability practices within the project and organization. * Participate in stakeholder engagement (including grievance redress mechanism) for feedback and concerns arising from environmental and social perspectives. |
| WWF | * Encourage innovation to evaluate and adopt emerging sustainability solutions, technologies, and methodologies applicable to the organization and project objectives for continual improvement. * Identify and assess sustainability impacts across the project. * Regularly evaluate the progress of KPIs and adjust strategies as necessary. * Facilitate discussions on sustainability measures with internal and external stakeholders. |

**4.12.4 Monitoring and Reporting**

Like all other plans, the project’s impact towards achieving its sustainability goals need to be measured. This should be done as follows:

1. Develop the P5IA during the development of the initial project plan. Like all other plans, it can be updated throughout the project life cycle.
2. Track performance with appropriate KPIs which have been developed at the start and serve at the project’s baseline to measure sustainability effectiveness.
3. Communicate sustainability performances regularly at team meetings and communicate with stakeholders (where appropriate) to foster transparency and accountability.
4. Incorporate performance tracking as part of decision-making processes integrated into different project management plans.
5. Follow up on and suitably resolve any stakeholder issues which arise through the grievance process as part of stakeholder engagement and communication.

# 5. CONCLUSIONS

This project was developed in 2022 utilizing the robust framework outlined the PMBOK® Guide Sixth Edition for defining the project as well as its effective planning, execution, monitoring and closure by the World Wildlife Fund. This framework served as the foundation for the project, ensuring seamless coordination across the various knowledge areas, their corresponding processes, and throughout the project lifecycle and includes a sustainable development plan which prioritized sustainable development and regenerative development principles. This comprehensive approach contributes to the project having a transformational impact. In conclusion,

1. The project charter was developed to formally authorize the WWF to carry out the work defined in the scope, objectives and milestones, as well as provided the foundation for the integrated project management plan. It provided the high-level definition of the project including various roles and responsibilities.
2. The integrated management plan was developed to outline the project processes and activities, ensuring smooth and efficient coordination and alignment across the various knowledge areas to maximize the team’s efficiency in carrying out the project. The integrated change control process was utilized throughout the project for managing any changes which arose.
3. The scope management plan was developed and outlined the project requirements to ensure a thorough understanding of the works required for the project completion. It included the development of the requirements traceability matrix, roles and responsibilities, project scope statement, WBS, and WBS dictionary.
4. The schedule management plan was developed with a detailed project timeline defining the milestones, activities to be carried out, their duration and sequence, the critical path to be able to monitor and track the timely project completion and adherence to the set deliverables.
5. The cost management plan was established to effectively estimate, manage the budgetary allocations for efficient resource utilization and control throughout the project lifecycle. The cost baseline was established with the total cost estimate and the contingency reserve. The total project cost was estimated at the activity level and includes a 10% contingency. The Earned Value Management (EVM) technique was used to control the project cost.
6. The quality management plan was defined to uphold the quality standards of the Project to ensure high-quality project deliverables. It established the quality objectives of the project deliverables and quality metrics, list of quality documents and standards to be utilized in this process.
7. The resource management plan was developed and efficiently identified and allocated necessary resources to the project, outlining how they will be managed and controlled to ensure their optimal utilization for successful implementation. An organizational breakdown structure was produced along with the resource breakdown structure, the responsibility alignment matrix (RAM), and RACI chart to define the roles and responsibilities of the project. The resource acquisition plan was created to outline the human and physical resources and type of acquisition required for the project. Other essential tools presented included team development, recognition and awards and conflict resolution approach.
8. The communication plan was developed and appropriately identified stakeholders and communication channels. The communication type and communication methods/artifacts, communication matrix, communication management protocol, steps for issues management through the communication process, communication escalation matrix were outlined. The plan facilitates effective information distribution and robust stakeholder management.
9. The risk management plan was developed, and established how potential project risks will be identified, analyzed, monitored, and controlled. The plan presents the risk register, issues log, lessons learned register, risk breakdown structure, change request form, change log, assumptions log, and activities to implement and improve project risk responses.
10. The procurement management plan was developed to oversee the acquisition of goods and services through effective procurement strategies to ensure the successful project completion. The plan presents the procurement process, the vendor selection criteria, approved sellers list, draft contract and project procurement plan.
11. The stakeholder management plan was developed and comprehensively identified and analysed the project stakeholders, managing their interests, influence, to ensure effective stakeholder engagement. The main tools utilized include the stakeholder register, stakeholder power/interest grid, and the stakeholder engagement and assessment matrix and stakeholder engagement campaign.
12. The sustainable development plan was developed and holistically evaluated the project's impact, ensuring a regenerative and sustainable approach throughout the project implementation. The plan presents the approach to identify and respond to sustainability impacts, roles and responsibilities, and monitoring and reporting process to improve the project’s sustainability performance. The P5IA was conducted to provide an inclusive assessment of the project’s environmental, social and economic performance.

# 6. RECOMMENDATIONS

1. The Project Sponsor should fully support the project manager and organization in all aspects of the project including collaborative efforts towards establishing strategic partnerships for utilizing the project in meeting larger sustainable development challenges in Belize and the region.

2. The project manager should emphasize and integrate collaborative efforts towards the established Integrated Change Control Process with the project team to capture and incorporate any changes in the project.

3. The project manager should organize interactive workshops and training sessions dedicated to the scope management plan, offering stakeholders the opportunity to ask questions, seek clarification, and gain a deeper understanding of the project scope and how changes will be managed. Additionally, the project manager and team should integrate agile practices into the scope management plan, for example using the Scrum framework, to enhance flexibility, responsiveness to changes, and deliver value to the stakeholders in a collaborative way.

4. The Project Manager should incorporate contingency buffers into the critical path activities as a proactive measure against potential project delays. Additionally, the project manager and wider WWF team should receive training and have the necessary licenses to fully utilize MS Project, enabling them to make timely updates and adjustments to the project schedule.

5. The project manager should engage with the Finance and Administration staff early and follow the processes as outlined in the procurement management plan. This will facilitate efficient alignment between the project requirements and the WWF procurement and administrative strategies/activities. This would include the identification of new potential suppliers with the aim to assess their capacity to meet the specific project requirements.

6. The Project Manager should consistently monitor project expenses and collaborate with the financial team to conduct periodic cost-benefit analyses, ensuring optimal resource allocation and alignment with project goals. The project should be tracked using an Enterprise Resource Planning (ERP) system to enable real-time budget reviews.

7. The project manager and team should take a comprehensive and collaborative approach to risk identification, encouraging team members and stakeholders to share their insights and experiences. Regular reviews of the risk register should be held throughout the project lifecycle to identify new risks and reassess the impact and likelihood of existing ones. The project manager should update the risk response strategies as needed. Additionally, the project manager and WWF Office should foster cross-functional risk ownership to ensure that risks are actively monitored and managed throughout the organization.

8. The project manager should share the quality assurance training used with the project team with other organizational departments/employees to ensure consistent compliance with quality standards across the organization. The project team should utilize quality control measures such as checklists, templates, inspections, and other relevant tools, to verify that work is being performed in accordance with the established quality standards.

9. The Project Manager and Functional (Resource) Managers should conduct a skills assessment to ensure that project team members and supporting staff possess the necessary skills for effective resource allocation. Critical, highly specialized resources should be identified, as their unavailability could impact project timelines and deliverables. The Project Manager should incorporate a weekly resource forecast into the planning process and collaborate with Resource Managers in advance to allocate resources accordingly.

10. The project manager should leverage various communication channels and implement the Communication Matrix to engage stakeholders effectively. In collaboration with the project team, the project manager should create a team charter to define and communicate the team's values, principles, meeting and communication protocols, and decision-making framework. This will ensure a clear understanding of roles, responsibilities, and expectations, helping to prevent any misunderstandings among team members.

11. The project manager should implement regular stakeholder updates, following the Communication Matrix to keep stakeholders informed about project progress, milestones, and other relevant developments. Additionally, the project manager should routinely evaluate and adjust communication channels to meet the evolving needs and expectations of stakeholders throughout the project.

12. The organization should empower the project manager at a strategic level by establishing a sustainability review board to ensure continuous alignment with social, environmental, legal and community needs. Additionally, the Project Steering Committee (PSC) should assist the project manager in establishing these partnerships with the key environmental organizations (both governmental and non-governmental entities), regulatory bodies, scientific and academic organizations to leverage their expertise in sustainable development, thereby strengthening the project’s ability to address environmental challenges and meet its social responsibility goals.

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# APPENDICES

## Appendix 1: FGP Charter

|  |  |
| --- | --- |
| **PROJECT CHARTER**  **Formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries.** | |
| **Date** | **Project Name:** |
| June 3, 2024 | Project Management Plan for Belize’s Environmental Enforcement Economic Analysis |
| **Knowledge Areas / Processes** | **Applicacion Area (Sector / Activity)** |
| **Knowledge areas**: project integration management, project scope management, project time management, project cost management, project quality management, project human resource management, project risk management, project communication management, project stakeholder management, project procurement management  **Process groups:** initiation, project planning, project execution, monitoring and controlling, and project closing | Environment/Legal/Economic |
| **Start date** | **Finish date** |
| June 3, 2024 | December 2, 2024 |
| **Project Objectives (general and specific)** | |
| General objective: To assess Belize’s current environmental enforcement framework, mapping out the differences between how the system should work vs. how it works, analyze legislative gaps, and make recommendations for improving the regulatory framework for protected areas in Belize.  Specific objectives:   1. To conduct a comprehensive literature review of Belize’s environmental laws and regulations. As well as pertinent documents/studies relating to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalities. 2. To assess Belize’s legislative framework to determine conflicts or overlap of Belize’s environmental laws and regulations with respect to enforcement and penalities. 3. To conduct a gap analysis to identify whether the existing laws are clear and adequate, if any conflicts exist between laws, and what is the resulting impact. 4. To map the enforcement system. 5. To prepare a qualitative and quantitative data collection strategy and develop a database for recording quantitative data. 6. To co-create a strategic action plan for strengthening environmental enforcement in Belize. | |
| **Project purpose or justification (merit and expected results)** | |
| This project aims to assess Belize’s current environmental enforcement framework and develop a strategic action plan to improve environmental enforcement in Belize. This work will support the design of Belize’s Project Finance for Permanence which focuses on coastal and marine protected areas, their connected ecosystem and the communities dependent on the health and wellbeing of those natural resources. | |
| **Description of Product or Service to be generated by the Project – Project final deliverables** | |
| This project will provide the following deliverables:   1. Situational analysis report detailing baseline of Belize’s laws and regulations pertaining to biodiversity protections, terrestrial and marine ecosystems and protected areas, enforcement responsibilities and applicable penalties. 2. Situational and gap analysis report which identifies recommendations for improvement to Belize’s environmental enforcement based on case studies, best practice publications etc. 3. Technical assessment report detailing the assessment of the legal framework efficiency and effectiveness, adequacy of existing laws, conflicts (if applicable) and the resulting impact. 4. Qualitative and quantitative data collection strategy which identifies the research and data collection methodology, listing of key stakeholders, data repositories to access, as well as timeline for execution of data collection activities. 5. Data synthesis report from data collection and analysis 6. Co-design and validation workshop report based on activities leading up to and concluded in the validation workshop for the development of the strategic action plan for strengthening Belize’s environmental enforcement. | |

|  |
| --- |
| **Assumptions** |
| The following assumptions have been made with respect to the criteria indicated below:   1. Reources: It is assumed there is availability of necessary technical expertise and data to support required analysis. 2. Resources: It is assumed that the Government of Belize and key government enforcement agencies, and key sectors support the project and will cooperate through the process. Furthermore, Various environmental enformcement agencies are willing to collaborate and align where necessary for the improvement of national environmental enforcement in Belize. 3. Resources: It is assumed that there will be unlimited access to relevant data and information required for assessments and analysis and that the project will receive the support and cooperation from key regulatory organizations and be willing to share information. 4. Resources: The budget and 6 month timeframe allocated for the project is sufficient for its successful completion. 5. Scope: The scope of this project will not change significantly. |
| **Constraints** |
| The following constraints have been made with respect to the criteria indicated below:   1. Time: The total time frame for the project will not exceed 6 months. 2. Cost: The budget will not exceed the allocated budget of USD $100,000. |
| **Preliminary risks** |
| 1. If the scheduled milestones are not adhered to, the project management plan may not be completed within the required six month time frame, and impede linked activities within the design of the Project Finance for Permanence Conservation Plan. 2. Stakeholder resistance (particularly to sharing enforcement data) could hinder the process. |
| **Budget** |
| The total estimate project cost is: $100,000 USD |
| **Milestones and dates** |
| |  |  |  | | --- | --- | --- | | Milestone | Start date | End date | | Project Start | June 3, 2024 | December 1, 2024 | | Literature Review | June 4, 2024 | June 28, 2024 | | Submission of Belize’s Interim situational analysis report | July 1, 2024 | July 12, 2024 | | Submission of Situational and Gap Analysis Final Report | July 15, 2024 | July 26, 2024 | | Enforcement mapping (detection to prosecution) | July 29, 2024 | August 2, 2024 | | Submission of technical assessment report on Belize’s legislative and regulatory framework | August 5, 2024 | August 16, 2024 | | Formulation of data collection strategy | August 19, 2024 | August 23, 2024 | | Quantitative and quantitative data collection | August 26, 2024 | October 4, 2024 | | Data analysis | September 23, 2024 | October 10, 2024 | | Submission of data synthesis report | October 11, 2024 | October 18, 2024 | | Co-design workshop | October 25, 2024 | October 25, 2024 | | Submission of workshop report | October 30, 2024 | November 6, 2024 | | Validation workshop | November 8, 2024 |  | | Submission of validation workshop report | November 11, 2024 | November 11, 2024 | | Submission of Strategic Action Plan | November 22, 2024 | November 22, 2024 | | Final Acceptance | November 25, 2024 | December 1, 2024 | | Project End | December 2, 2024 | December 2, 2024 | |  |  |  | |
| **Relevant Historic Information** |
| In November 2021, the Government of Belize entered agreement for a Blue Bond with the Nature Conservancy and signed a Memorandum of Understanding with the World Wildlife Fund for a Project Finance for Permanence (PFP) initiative. This bond and the PFP initiative will secure long term funding for marine protected areas in Belize. While the financial commitment is a positive move towards environmental conservation in Belize, enforcement of the existing environmental laws and regulations is still a challenge. Hence, the World Wildlife Fund is executing a project to analyze the enforcement of environmental laws in relation to marine and terrestrial protected areas in Belize. The project will also develop a strategy for the strengthening of enforcement of environmental laws in Belize. Through the efforts of the project, the enforcement climate and the economic implications will be analyzed and used to strengthen the governance and environmental enforcement frameworks for protected areas and marine ecosystems. |
| **Stakeholders** |
| **Direct Stakeholders**   1. Project Sponsor 2. Project Manager 3. Project Team Members: Technical advisors 4. Project Steering Committee 5. Environmental Enforcement Agencies (Government) 6. Other government enforcement agencies (Port Authority, Coast Guard, Police Department) 7. Enforcement Personnel (NGO Protected Area Co-Managers) 8. Members of the Judiciary (Magistrates, Lawyers, Prosecutors) 9. Consultants   **Indirect Stakeholders:**   1. Community members 2. Key sector representatives (tourism associations, fisher associations, fisher cooperatives) |

Appendix 2: FGP WBS

A diagram of a company's organization chart

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(own work)

## 

## Appendix 3: FGP Schedule

A screenshot of a computer

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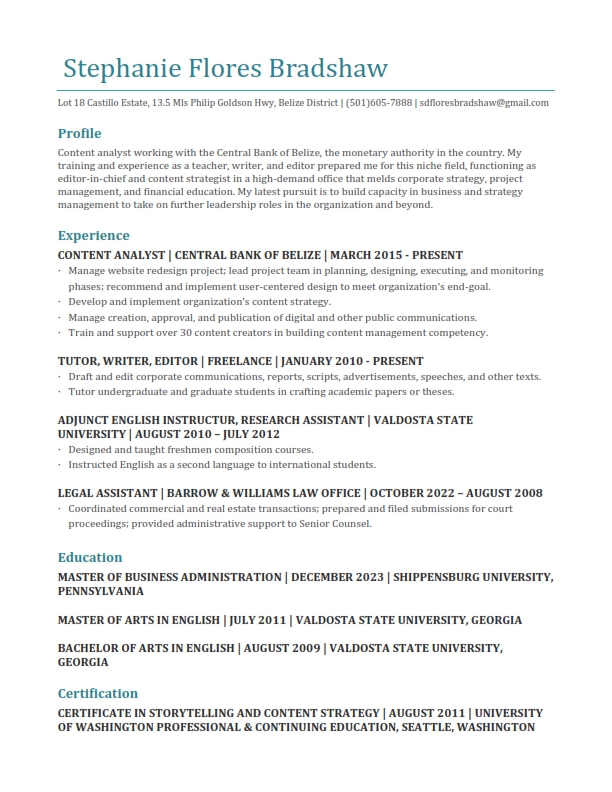
## Appendix 4: Philological Dictum

A close-up of a letter

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A certificate with a badge and a seal

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1. Pre-Approved Vendors shall undergo due diligence checks every 2 years. List to be updated in June 2025. [↑](#footnote-ref-1)