

UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

ESTABLISHING A PROJECT MANAGEMENT OFFICE
For the Belize Forest Department

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APPROVAL PAGE

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DEDICATION

I dedicate this research to my family, especially to my children Camryn and Caileigh Linares, who have been the greatest source of motivation throughout my academic journey. I set out not only with the aspiration to build capacity in an area of work that excites me, but also to demonstrate to my children that you can truly accomplish anything you set your heart to with hard work, dedication, and perseverance.

I also wish to dedicate this work to my husband Henry Linares Jr., who has offered his unwavering support and encouragement during this journey. He always cheered me on when I was discouraged and found meaningful ways to uplift my spirits. To my mom, Monica, who has been my biggest cheerleader and unrelenting pillar of strength, thank you for always believing in me. Lastly, to my sister Kayla, whose encouragement marked the genesis of this journey. Your encouragement and unwavering support propelled me to the end of the race.

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ABBREVIATIONS AND ACRONYMS

CFO	Chief Forest Officer
CITES	Convention on the International Trade of Endangered Species of Flora and Fauna
CMMI	Capability Maturity Model Integration
FD	Forest Department
FGP	Final Graduation Project
GEF	Global Environment Facility
GOB	Government of Belize
KPI	Key Performance Indicator
MAFFESDI	Ministry of Agriculture, Fisheries, Forestry, Environment, Sustainable Development and Immigration
MEAs	Multilateral Environmental Agreements
NCSA	National Capacity Self-Assessment
NGOs	Non-Government Organizations
NRM	Natural Resource Management
OPM3	Organizational Project Management Maturity Model
PIF	Project Initiation Form
P3M3	Portfolio, Program & Project Management Maturity Model
PMBOK	Project Management Book of Knowledge
PMI	Project Management Institute
PM	Project Management
PM	Project Manager
PMMM	Project Management Maturity Model
PMO	Project Management Office
SEI	Software Engineering Institute
UNCBD	United Nations Convention on Biological Diversity
UNDP	United Nations Development Programme
UNFF	United Nations Forum on Forests
UNCCD	United Nations Convention to Combat Desertification
WBS	Work Breakdown Structure

EXECUTIVE SUMMARY (ABSTRACT)

This research was designed to explore and demonstrate the achievement of financial sustainability of a public institution through the standardization of practices and utilization of project management frameworks via the introduction of a Project Management Office (PMO) in the organizational architecture of the Forest Department in Belize. In order to achieve this, the identification of the research subject immediately followed by a definition of the research scope was required. The assessment was conducted through a series of tools such as questionnaires. The primary participants included staff and management of the Belize Forest Department.

The Forest Department (FD) is one of the oldest government institutions in the country, since its establishment in 1927. The FD is a subset of Ministry of Agriculture, Fisheries, Forestry, the Environment, Sustainable Development, and Immigration. As a regulatory agency, the FD is responsible for the oversight and management of Belize's forest resources, which include the use and protection of forests including granting of forest licenses and permits, collection of royalties for forest resources, monitoring, and the design and implementation of management plans. In order to execute this mandate, the FD maintains six district offices organized under a programmatic approach. The FD's mandate though, has evolved significantly over the years. In addition to its stated responsibilities, the FD also serves as the national focal point to several Multilateral Environmental Agreements (MEAs). In an effort to meet its obligations under the MEAs and improve its ability to carry out its mandate, the FD also assumed the responsibility of managing projects. Over the years, the FD has managed several multimillion-dollar projects with varying degrees of success.

The problem the FD faced is the fact that the funds it receives from central administration is insufficient to meet the demands of the department; thus, projects are needed to fulfil its mandate. In order to attract projects, the FD must demonstrate its ability to manage and meet their objectives. However, there are no standard operational procedures or practices established by the department and there are no best practices to guide managers during project implementation. Without established guidelines, there are lost opportunities for the realization of additional benefits to the Department.

The general objective of this research project was to propose the establishment of a project management office in the Belize Forest Department; to consequently improve programme management and increase financial sustainability for effective results in the implementation of its organizational mandate. The specific objectives were to conduct an institutional assessment to determine organizational maturity level; to conduct an analysis to determine the most appropriate type of PMO for the department; to propose the roles and responsibilities of the PMO in order to determine its effectiveness and its contribution to achieving the department's mandate; to design an implementation plan for the establishment of a PMO for the Department, and to determine a set of KPIs to measure PMO performance.

The methodologies employed in this research were based on literature reviews of similar researches using the analytical, deductive, and observational methods. The analytical and deductive methods allowed for an in-depth analysis of the department's structure, while the observational method was used to evaluate and record the deliverables and their acceptance by stakeholders. The tools used in this research were based on an Organizational Project Management Maturity Model (OPM 3) questionnaire sample. The results of the analytical method propelled the analysis of the different types of PMOs in order to determine the most suitable for the FD's development.

Based on the maturity assessment results, it was determined that the FD's maturity is **Standardize**. Although its maturity is at the entry point of the scale, the potential for further maturity is high. The FD demonstrated strengths and weaknesses in certain project management areas which included stakeholder management and scope management respectively. Following an analysis of the three basic types of PMOs, it was concluded that a **Hybrid** of supporting and controlling PMO was most suitable for the FD at this time. It was further concluded that establishing project methodologies, project tracking and project support constitute the main roles and responsibilities identified for the proposed PMO. In consideration of the FD's organizational culture, an implementation plan for the PMO was designed to be executed over a twelve (12) week period. Finally, a suite of key performance indicators was outlined to track PMO performance and as well to demonstrate financial sustainability.

Thus, in keeping with the main objective of this research, a PMO was deemed necessary and should be developed to improve programme management and increase financial sustainability of the FD for effective results in the implementation of its organizational mandate.

Pursuant to the results of this research, it was recommended that:

A maturity assessment should be conducted on an annual basis to determine maturity as well as to identify the department's strengths and needs over time. A monitoring and evaluation plan should be developed for the PMO. This plan would require that internal audits be conducted on a semi-annual basis during the first two years of the PMO's existence. Furthermore, this assessment will afford the Project leadership and FD's administration an opportunity to analyse the PMO's relevance as well as to advise the administration and other relevant stakeholders on the appropriateness of the PMO.

Implementation of a PMO at the FD is a novelty; thus, it is recommended that a team with the appropriate expertise lead the process. A task force should be established to examine the roles and responsibilities of the PMO. This would facilitate a smooth transition to the successful implementation of the PMO.

1 INTRODUCTION

1.1 Background

The Forest Department (FD) was established in 1927 and remains one of the oldest government institutions in the country. The FD is a regulatory agency charged with the responsibility to manage forests and forest resources on public lands and protected areas. The FD maintains responsibility for more than fifty percent of the established 103 protected areas across the country. Through its district offices, the FD has arranged itself under three primary programmes. This number was greater in the early 2000s; however, due to shrinking budget allocations, these could no longer be maintained.

The FD's mandate has evolved steadily over the years especially with the advent of sustainable development and the growing need for better management practices. The scope of forest management expanded beyond extractive uses in consideration of on other forest values, such as provision of non-timber forest resources and the ecosystem functions.

Therefore, in addition to its state responsibilities, the FD also serves as the national focal point to several Multilateral Environmental Agreements (MEAs). These include the United Nations Convention on Biological Diversity (UNCBD), United Nations Forum on Forests (UNFF), Convention on the International Trade of Endangered Species of Flora and Fauna (CITES), Convention on Wetlands (Ramsar Convention), and United Nations Convention to Combat Desertification (UNCCD), to mention a few.

As signatories to these MEAs, countries are expected to fulfil the obligations therein. These include: reporting to the convention following established timeframes, updating or developing adequate policies and strategies to strengthen environmental management and maintaining protection in order to meet global targets. Due to their small size and transitioning economies, developing countries such as Belize, are

often disadvantaged. In a National Capacity Self- Assessment (NCSA), which was conducted in 2005, it was observed that the following critical challenges exist: poor harmonization of sectoral policies, weak land use planning, poor coordination among national institutions; poorly developed environmental information systems, and a low level of understanding of ecosystem approach to resource management. These challenges collectively act as critical constraints to effective implementation of MEAs. The FD often relies on funding from international sources, such as the Global Environment Facility (GEF) and World Bank, to develop and implement projects to address these issues. These resources allow the FD to acquire and train its staff, obtain critical equipment, develop, and or update policies and strategies to fulfil its international obligations and effectively execute its overall mandate.

Unfortunately, despite millions of dollars in investments from projects, the Department continues to face challenges such as resource limitations primarily due to inadequate organizational structures, insufficient experience in project management, and inadequate documentation and dissemination of best practices. These, coupled with the FD's decentralized operational structures and inadequate communication approaches, severely retards the FD's ability to facilitate knowledge transfer and promulgate good project management practices, policies, and norms for integration in programme management.

Although the FD generates substantial income through licenses and royalties, the funds are directly deposited to a consolidated fund inaccessible to the department for its daily operations. Instead, central administration allocates a percentage of these funds annually to the FD. Worthy to note is that approximately 85% of these funds are used to cover the staff salaries, leaving a mere 15% for implementation of programme. As a result, the FD relies heavily on projects as well as its development partners, including non-government organizations (NGOs) and civil society to assist in executing its mandate. This situation underscores the need for greater financial sustainability measures at the FD to fulfil development goals and targets as prescribed in policy and strategic documents.

1.2 Statement of the problem

The problem that the FD faces is multifaced. Firstly, due to strict administrative measures, the budget allocation it receives from central administration is insufficient to meet the demands of the department current mandate. As a result of its participation in MEAs, the FD's mandate is expected to increase; thus, it must be able to maximize the funds available from international donors. There is a greater demand for improved project performance in order to have the necessary resources to implement critical activities. Thus, the FD must improve its ability to attract and implement projects. In order achieve this, it must ensure that staff are formally trained. If project management responsibilities are assigned to programme managers who are ill-equipped and ill-prepared to manage the additional duties, this can result in time delays at project initiation to facilitate capacity development. Knowledge of project management areas facilitates development of good management plans such as schedule and budget management which are integral to successful implementation.

Additionally, given that there are no standard operational procedures or practices established by the department, there are no best practices to guide managers during project implementation. This can result in costly mistakes to the department. In order to achieve good results, stakeholders must be properly engaged. Lack of established procedures provides room for persons or groups to be overlooked, including those internal to the project. Managers must be able to adopt and apply policies that will not only satisfy donor institutions, but also yield good results. Without established guidelines, there are lost opportunities for the realization of additional benefits to the Department. It must also be noted that the absence of a PMO leaves little to acquire knowledge on best practices, and most importantly, to identify synergies between projects and programmes.

Furthermore, there are no established guidelines for reporting and recording project activities. This lack of centralized repository for projects leaves the Department

unable to track project progress and achievements during implementation of past or current projects. This problem is further exaggerated by its decentralized management structure. There is a persistent gap and lack of communication among project managers and the district offices. This severely hinders the FD's ability to develop medium to long term plans.

Considering all the challenges outlined above, it is believed that the establishment of a project management office (PMO) will serve to significantly reduce or eliminate these challenges. The PMO will offer established guidelines and methodologies for the implementation of projects to improve success and set the FD on a path to improved financial sustainability.

1.3 Purpose

This proposal seeks to establish a PMO to demonstrate how it can be used to improve project performance at the Forest Department through greater synergies across programmes in order to efficiently execute its departmental mandate. Additionally, this project seeks to determine the most appropriate project management model for the institution, in an effort to ensure financial sustainability for the implementation of its policies and programmes, track results, and improve the implementation of programmes. Furthermore, the establishment of a PMO will contribute greatly towards building a cadre of trained professionals within the department.

The overall intended benefit of this process is presentation of an appropriate improved success rate of projects that are managed by the department. Additionally, to introduce appropriate methodologies which will improve financial sustainability of the organization to implement its policies and programs. The lesson can then be shared with other departments within the ministry or upscaled at the Ministry level. Additionally, it will also provide an adequate framework to monitor the progress of projects and programmes by monitoring project-performance governance, providing training, and setting or defining standards.

1.4 General objective

- To propose the establishment of a project management office in the Belize Forest Department to improve programme management and increase financial sustainability for effective results in the implementation of organizational mandate.

1.5 Specific objectives

- To conduct an institutional assessment to determine organizational maturity level.
- To conduct an analysis to determine the most appropriate type of PMO for the organization.
- To propose the roles and responsibilities of the PMO in order to determine its effectiveness and its contribution to achieving the department's mandate.
- To determine the resources required to establish a PMO at the FD.
- To design an implementation plan for the establishment of a PMO for the Department
- To determine a set of KPI to measure PMO performance.

2 THEORETICAL FRAMEWORK

2.1 Company/Enterprise framework

This research is being conducted at the Forest Department. One of the oldest institutions in the Government of Belize (GOB) since its establishment in 1927.

The Forest Department is a regulatory governmental institution under the Ministry of Agriculture, Fisheries, Forestry, Environment, Sustainable Development, and Immigration (MAFFESDI). As a Department of the Ministry of Agriculture, Forestry, Fisheries, the Environment and Sustainable Development (MAFFESD) the Forest Department has the responsibility of overseeing the conservation, protection, management and utilization of Belize's forest resources and its biodiversity. The Department has to ensure that the productive capacity of the forests for both goods and services is maintained or enhanced for the sustainable development of the country.

2.1.1 Company/Enterprise background

As a subset of the MAFFESDI, the Forest Department maintains management functions for forests including the following: their use and protection, granting of forest licenses and permits, collection of royalties for forest resources, monitoring and the design, and implementation of management plans. In addition, the FD regularly engages in the implementation of projects to establish institutional frameworks and ensure compliance with obligation of the various MEAs that it has ratified. These projects range from small to full sized, depending on the focal area of the project.

2.1.2 Mission and vision statements

Vision

The Forest Department seeks to establish itself as a competent regulatory agency, sustainably managing forest resources for the long-term benefit of the Belizean people.

Mission

A results-oriented Department that manages Belize's forest resources, enabled by informed decision-making and highly motivated and competent staff, in collaboration with partners and stakeholders.

2.1.3 Organizational structure

In order to execute its mandate, the Department has recently updated its management structure following the development of its five (5) year strategic plan to one that represents an amalgamation of programs and roles. The FD has established six (6) district offices across the country arranged under three primary programmes: The Sustainable Forest Management, Wildlife, and Protected Areas Management. The hierarchal chart depicts an administrative structure comprised of three (3) persons headed by the Chief Forest Officer (CFO) followed by the Deputy Chief Forest Officer and supported by the Administrative Assistant. The FD is further supported by technical officers including forest officers, foresters and rangers. Each program and district office is managed by Forest Officers supported by Foresters, and Forest Rangers.

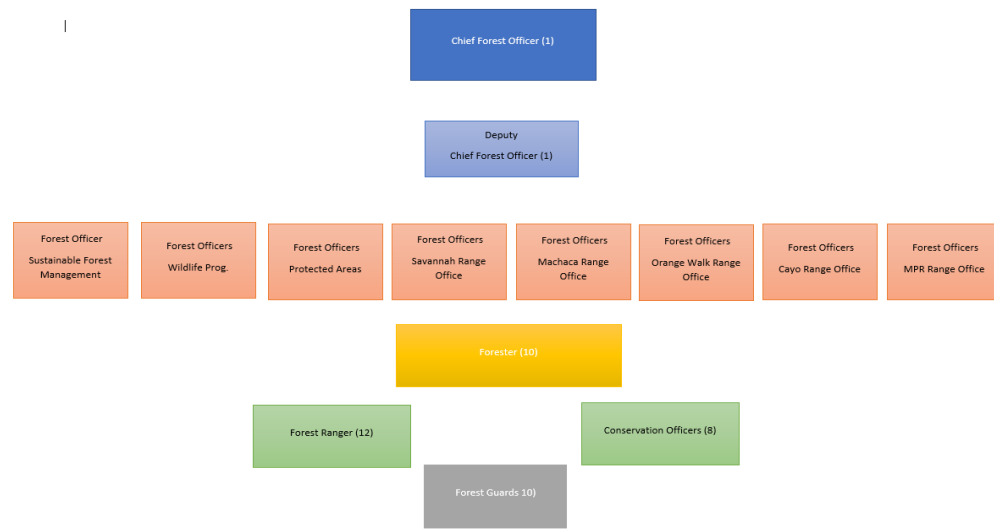


Figure 1 Organizational structure (Source: Forest Department, 2017)

2.1.4 Products offered

The Forest Department is a regulatory agency and as such is primarily a service-oriented organization. Its main outputs include the provision of permits and licenses for the following purposes:

- Extraction of timber and non-timber forest products
- Research
- Management of certain wildlife

The permits are categorized as petty permits for the purposes of salvage or for small scale operations for extractive purposes; however, these are regarded as unsustainable. The licenses, on the other hand, are either issued on a medium to long-term basis. Additional services provided to the public included the review and development of management plans, drafting of maps, and implementation of suitability assessments.

2.2 Project Management concepts

Project management is the application of processes, methods, knowledge, skills, and experience to achieve the project objectives as stated by the Association for Project Management. Specifically, project management refers to the art of managing all aspects of a project, from its inception to closure, using a scientific and structured methodology that results in the creation of a unique product, service or result.

In order to effectively deliver on project deliverables, a project manager must demonstrate, with confidence, knowledge of the myriad of processes and concepts associated with the discipline. For the purposes of this research, the applicable processes and concepts are outlined below.

2.2.1 Project

A project is defined as a temporary endeavor that has a defined beginning and an end to create a unique product, service or result. It has a distinct scope and resources and is defined by a specific set of operations designed to accomplish a singular goal (PMBOK®, Sixth Edition, p.4). As it relates to this research, the project

refers to the establishment of a PMO at the Forest Department. As highlighted in the PMBOK®, the application and effective use of project management processes, tools, and techniques can provide a solid framework to achieving organizational goals and objectives.

2.2.2 Project management

Project management is defined as the application of knowledge, skills, tools, and techniques to project activities in order to attain the project requirements (PMBOK®, Sixth Edition, p.10).

2.2.3 Project life cycle

The project life cycle is the series of phases that a project undergoes from its initiation to its completion. These foundational elements provide the basic framework for managing projects. It is worthy to note that the phases may be sequential, overlapping, or iterative (PMBOK® Sixth Edition, p.19). Nonetheless, the generic life cycle of a project is comprised of the following listed below.

- Commencing the project
- Organizing and Planning
- Carrying out the work
- Monitoring and controlling
- Closing the project

Monitoring and controlling in some instances is listed as one of the phases of the project life cycle. However, it must be noted that this occurs continuously throughout the project cycle.

Figure 2 depicted provides a snapshot of the phases typically involved in managing a project.

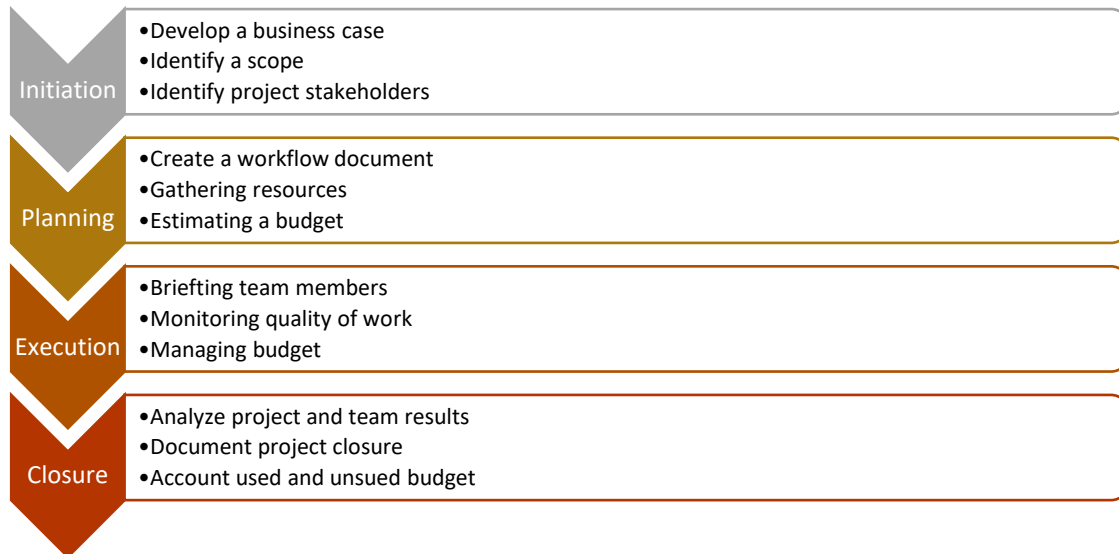


Figure 2 Generic Project Life Cycle Phases

(Source: Author, 2018)

Notably, the Forest Department does not currently have an established project life cycle which it utilizes. However, it does have some experience as it relates to; It is to some extent involved in the initiation process as it relates to identifying projects at the department. Typically, project identification is facilitated in conjunction with development partners such as the United Nations Development Programme (UNDP). Over the course of several meetings with focal points of the various MEAs within the Ministry, multi-focus projects are identified and elaborated. A project initiation form (PIF) is completed and channeled through the offices of the UNDP for approval. Following approval of the PIF from the donor, an external consultant is identified and hired to develop a full project document. Meetings are then held with the upper managerial arm of the FD to assist in defining the project goals and objectives.

Consequently, with the installation of a PMO, it is envisioned that the processes and procedures will be proposed for the Department as a means to improve overall project success, as well as the management of its existing programs.

2.2.4 Project management processes

Project management is composed of a myriad of interlinked processes that formulates its core. While processes generally regarded as a series of actions bringing about a result, project management processes are concerned with describing and organizing the work of a project. Collectively, there are forty-nine (49) known processes that have been elaborated in the PMBOK. These project management processes are organized in five (5) main groups seen below and further dissected across the ten (10) knowledge areas.

- **Initiating processes**—recognizing that a project or phase should begin and committing to do so. Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase
- **Planning processes**—devising and maintaining a workable scheme to accomplish the business need that the project was undertaken to address. Those 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.
- **Executing processes**—coordinating people and other resources to carry out the plan. Those processes performed to complete the work defined in the project management plan to satisfy the project requirements.
- **Controlling processes**—ensuring that project objectives are met by monitoring and measuring progress and taking corrective action when necessary. Those 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.

- **Closing processes**—formalizing acceptance of the project or phase and bringing it to an orderly end. Those processes performed to formally complete or close the project, phase, or contract.

These are further illustrated in the Figure 3 provided below.

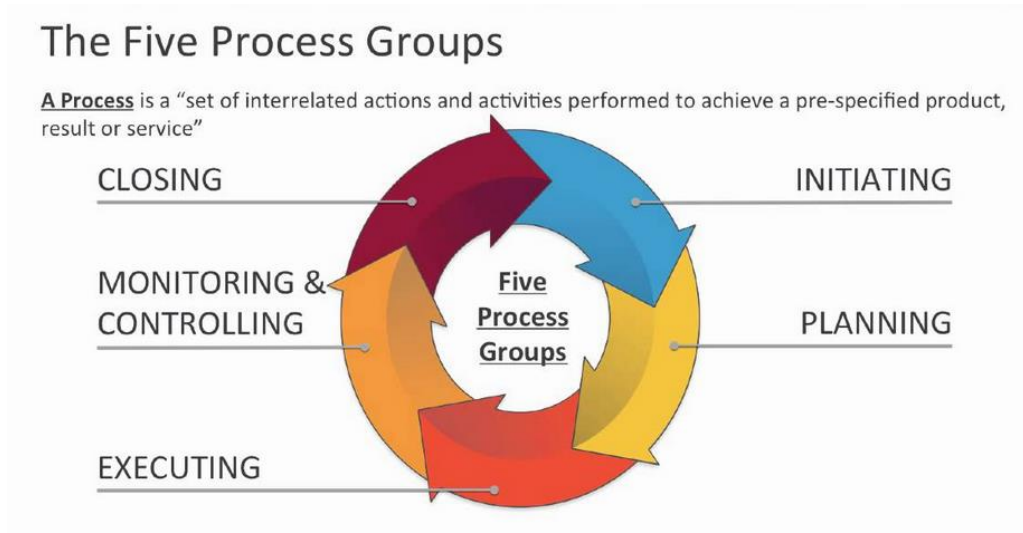


Figure 3 The Five Project Management Process Groups

Source (Huddol, 2017)

Every project, irrespective of size, is subject to the different stages of the project management processes. It is worthy to note that the processes and knowledge areas are interlinked, so much that the outputs of one process serves as input to other processes.

In order to establish a PMO, as is the focus of this research project, all the project management processes will be considered, since these will serve as the foundational elements in providing a framework to guide the FD in the implementation of projects.

2.2.5 Project management knowledge areas

A knowledge area is an identified area of project management and is characterized by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques (PMBOK, Sixth Edition, p.23).

The ten knowledge areas are important to explore in establishing a PMO as these will be used to assess the maturity of the FD as well as aid in determining the appropriate PMO for the organization. The knowledge areas as elaborated in the PMBOK sixth edition are as follows:

Project Integration Management - Describes the processes required to ensure that the various elements of the project are properly coordinated. This knowledge area characterizes the initial steps of a project development. It facilitates the integration of all project management processes as well as their interdependencies. Furthermore, it also facilitates the development of the project charter, project Management Plan, project monitoring and control plan, and integrated change control. This is especially critical to this research considering the decentralized organizational structure currently utilized by the FD.

Project Scope Management - Describes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully. It consists of initiation, scope planning, scope definition, scope verification, and scope change control.

Project Time Management - Describes the processes required to ensure timely completion of the project. It consists of activity definition, activity sequencing, activity duration estimating, schedule development, and schedule control. This will ensure that the project will be completed by May 2019, as required by UCI.

Project Cost Management - Describes the processes required to ensure that the project is completed within the approved budget. It consists of resource planning, cost estimating, cost budgeting, and cost control.

Project Quality Management - Describes the processes required to ensure that the project will satisfy the needs for which it was undertaken. It consists of quality planning, quality assurance, and quality control.

Project Human Resource Management - Describes the processes required to make the most effective use of the people involved with the project. It consists of organizational planning, staff acquisition, and team development.

Project Communications Management - Describes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information. It consists of communications planning, information distribution, performance reporting, and administrative closure.

Project Risk Management - Describes the processes concerned with identifying, analyzing, and responding to project risk. It consists of risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, and risk monitoring and control.

Project Procurement Management - Describes the processes required to acquire goods and services from outside the performing organization. It consists of procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract closeout.

Project Stakeholder Management – Describes processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop

appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

2.3 Project Management Office

A project Management Office (PMO) is an organizational management structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques. The responsibility of a PMO can range from providing project management support to directly managing one or more projects. (PMBOK, Sixth Edition, p.48).

There are several different types of PMOs. The PMBOK identifies three (3) different types. The variances are attributed to the degree of control and influence the PMOs has on projects within an organization. These are: Supportive, Controlling, and Directive.

Chart 1 Types of PMOs (Source: Author)

Type of PMO	Function
Supportive	Consultative – supplies templates, training, and best practices
Controlling	Control – provides support but requires compliance through management frameworks, and or methodologies
Directive	Directive – takes full control and directly manages projects

A supportive PMO structure functions primarily in a consultative capacity to projects by supplying templates, best practices, and training. Additionally, it also serves as a repository of information from lessons learnt from previous projects. Whereas, a controlling PMO structure functions in a supportive capacity to projects by requiring compliance through project management framework or methodologies and using specific templates, tools and forms or conformance to governance to achieve its mandate. While a directive PMO structure is one that takes full control and directly

manages the project (s). This PMO structure has the highest control of all the three (3) PMO structures.

In addition to the above stated, it must be noted that a PMO may also have organizational wide responsibilities. For instance, it may play a role in supporting strategic alignment or the organization to delivery wholistic value. The PMO may also integrate data and information from organizational strategic projects and evaluate how higher-level strategic objectives are being fulfilled.

2.4 Project Management Maturity

Project management maturity (PMM), as defined by PMI is, “the degree to which any organization practices organizational project management. As stated by Crawford 2007 PMM refers to the progressive development of an enterprise-wide project management approach, methodology, strategy, and decision-making process as defined by the three core areas of project management: people, process, and tools. He indicated that the benefits of PM maturity assessment lie in setting direction, prioritizing actions and beginning cultural change rather than primarily identifying the current level at which an organization was performing.

The Project Management Maturity model provides the organization an opportunity to identify gaps, and take important operational steps, toward improving its entire culture around project management.

	Level 1: Initial	Level 2: Repeatable	Level 3: Defined
People	No PM Background	Basic PM Training	PM Certification Process Automated
Process	Ad-hoc	PM Standardized	workflows Portfolio reporting
Tools	Paper Word Excel Email	Templates Scheduling Collaboration Tools	EPM Tool

Figure 4 Project Management Maturity Roadmap

Source (Innovative-e, 2010)

The appropriate level of maturity will vary for each organization based on its specific goals, strategies, resource capabilities, scope, and needs. It is stated that the organization has achieved full project management maturity when it has met the requirements and standards for project management effectiveness as defined by the Project Management Maturity Model (PMMMSM), and it is capable of demonstrating improvements such as on-time project delivery, cost reductions, organizational efficiency, and profitability.

There are several known maturity models; however, just like the discipline of project management, they can be rather sector specific. Below is a list of a few that have been identified during the desktop review for the purposes of this research. These are:

- Portfolio, Program & Project Management Model (P3M3)
- Organizational Project Management Maturity Model (OPM3)
- Capability Maturity Model Integration (CMMI)
- Lean Six Sigma Maturity Model

Maturity models in general provide organizations with a starting point for benchmarking the current quality level of portfolio management activities and provide

improvement guidelines. There are several best practises for identifying the organizational project portfolio management maturity.

2.4.1 Portfolio, Program & Project Management Model (P3M3)

The P3M3 describes the portfolio, programme and project-related activities within key process areas that contribute to achieving a successful project outcome. The Office of Government Commerce 2016 stated that P3M3 helps organizations address fundamental aspects of managing portfolios, programmes, and projects, improve the likelihood of a quality result and successful outcome, and reduce the likelihood of risks impacting projects adversely. It recognizes not only the programme and project management activities being carried out at the individual programme and project level, but also those activities within an organization that provide focus and help sustain effort to build a programme and project infrastructure of effective programme and project approaches and management practices.

P3M3 identifies five progressive levels of maturity similar to CMM. The level one “Initial process” asks if the organization is able to identify projects and programs and manage them separately from ongoing business activities. The second level “Repeatable Process” questions the organization’s ability to run processes according to standards that are at least minimally specified. “Defined Process” is the third level that examines if the organization has controlled processes that allow adjustment to individual project purposes. The fourth level is the “Managed Process”, which highlights the quality performance measurability and predictability. Level five, the “Optimized Process”, underlines proactive management of technology and continuous improvement of processes. (United Nations Development Programme 2015.)

2.4.2 Organizational Project Management Maturity Model

The Organizational Project Management Maturity Model (OPM3) is a framework that provides an organization-wide view of portfolio management, program management, and project management to support achieving Best Practices within each of these

domains. This holistic perspective is a powerful tool enabling successful execution of organizational strategies, portfolios, programs, and projects, especially when these transcend functional and hierarchical boundaries.

OPM3 identifies key leverage points that represent interactions between organizational governance, strategy execution, and project, program, and portfolio delivery. By understanding and using these leverage points, an organization can methodically pursue its strategic goals through portfolios, programs, and projects, consequently achieving the desired organizational outcomes.

OPM3 maturity according to (Pinto and Williams, 2013) is classified into four levels, which are:

1. Standardize: Structured processes are adopted
2. Measure: Data is used to evaluate process performance
3. Control: Control plan developed for measures
4. Continuously improve: Processes are optimized

OPM3 maturity assessments help organizations identify which Best Practices, Capabilities, and Outcomes they currently exhibit. The flexibility of the maturity assessment process permits an organization to focus on specific domains (project, program, and/or portfolio) or organizational Enablers, or on a specific stage of maturity (standardize, measure, control, or continuously improve). These assessments can help the organization identify what Best Practices, Capabilities, or Outcomes it may currently exhibit

2.4.3 Capability Maturity Model Integration

Capability Maturity Model (CMM) developed by the Software Engineering Institute (SEI) in 1980s, can be applied to an organization in any field of business. CMM was originally created after a research suggested that there was a relation between the quality of software applications and quality of used development processes. Hannien

2016 suggests that the model provides best practices for development and identification of maturity of processes in an organization. It takes into account the current state analysis, the past experience, shared practices, framework for prioritizing actions, and future dimensions as the organization should be able to set a target state and improvement needs to reach it.

CMM model has a definition for five maturity levels (Select Business Solutions 2015; Rouse April 2007). These are:

- Initial - offers as a starting point for implementing new processes to a disordered situation. Individual efforts play a remarkable role for project success
- Repeatable - emphasizes the disciplined repetition of documented processes
- Defined - organization has gained benefit from the repetition, and processes are being defined as standard processes
- Managed - processes are managed, monitored and measured by examining the gathered data
- Optimizing - organization is improving the processes through monitoring feedback from the processes that are in use.

2.4.4 Lean Six Sigma Maturity Model

Six Sigma is an organized and systematic method for strategic process improvement and new product and service development that relies on statistical methods and the scientific method to make dramatic reductions in customer-defined defect rates.” This systematic method is the define, measure, analyse, improve, and control (DMAIC) structure (De Mast & Lokkerbol 2012). Six Sigma is described as a strict data driven methodology that has a set of techniques and tools for process improvement. It aims to improve the quality of the output of a process by identifying and removing the causes of defects and minimizing variability in manufacturing and business processes. (QP, 2017). The Six Sigma Maturity Model provides an outline of five levels of Six Sigma development. The intent of the model is to help Six Sigma practitioners, deployment leaders, and executives:

1. Benchmark where their companies stand in relation to broader patterns experienced by other organizations.
2. Assess the areas of strength and performance gaps in their deployments.
3. Pinpoint specific steps they might take to close gaps and graduate to the next stage of their Six Sigma journey.
4. Communicate progress to their Six Sigma teams and to the broader community within their companies to garner support for their continuous improvement efforts.

The five levels are:

1. Launch – This is the starting point – wherein an initial few visionaries in the organization launch Six Sigma, training is initiated, and projects are begun.

2. Early Success – The initial projects are yielding results and early successes are being achieved.

3. Scale and Replication – The early success has led to other parts of the organization buying in to Six Sigma and a broader launch of projects is under way.

4. Institutionalization – Throughout many parts of the company, projects are yielding broad-based financial impact.

5. Culture Transformation – Six Sigma is part of the organizational DNA; financial impact is sustained, and the Six Sigma culture is pervasive – even beyond the Six Sigma practitioners and beyond the company boundaries.

For the purposes of this research, the most appropriate model would be the lean six sigma maturity model given its scope.

3 METHODOLOGICAL FRAMEWORK

3.1 Information sources

There is an age-old adage which states that we are living in the information age. The need for information is inextricably woven into the fabric of every aspect of our daily lives that it is unfathomable to function without it. Thus, it is undoubtedly a valuable commodity. Information gets generated in various ways. For this reason, it may be recorded in a variety of sources to be made available for use by users.

A source is a place or person from which you can obtain something useful or valuable. A resource is something that can be used to perform some function. The sources from where we get information are called information sources and these comprise of documents, humans, institutions as well as mass media like radio and television. Consequently, and for the purposes of this research, an information source is one which provides us the required information. These will include interviews, literature review, department archives, personal staff experiences, academic journals, and the world wide web.

Useful information, according to (Aurora, n.d.) is regarded as that which is used, and which creates value. It then follows that there are predetermined qualities that define "good information". These included, but are not limited to, its relevance, accuracy, periodicity and target audience. It has to be communicated in time with right level of details and communicated through appropriate channels and in a manner that is clear and understandable to the intended user.

3.1.1 Primary sources

A primary source provides direct or first-hand evidence about an event, object, person, or work of art. Primary sources provide the original materials on which other research is based users to get as close as possible to what actually happened during a particular event or time period. Published materials can be viewed as primary resources if they come from the time period that is being discussed and were written

or produced by someone with first-hand account of the event. Often, primary sources reflect the individual viewpoint of a participant or observer. Primary sources can be written or non-written (sound, pictures, artefacts, etc.). In scientific research, primary sources present original thinking, report on discoveries, or share new information.

For the purposes of this research, the primary sources of information that will be used include official departmental records, interviews with the CFO as well as with other staff (Forest Officers/Project Managers), personal experiences, surveys and technical reports.

3.1.2 Secondary sources

Secondary sources refer to those not retrieved as a result of first-hand account. They describe, discuss, interpret, comment upon, analyse, evaluate, summarize, and process primary sources. A secondary source is generally one or more steps removed from the event or time period and are written or produced after the fact with the benefit of hindsight. Secondary sources often lack the freshness and immediacy of the original material. On occasion, secondary sources will collect, organize, and repackage primary source information to increase usability and speed of delivery, such as an online encyclopaedia.

These would include information within textbooks such as the PMBOK, FD's archives, world wide web, journal reports, presentations on PMOs indexes, and abstracts.

Chart 2 Information Sources (Source: Author)

Objectives	Information sources	
	Primary	Secondary
To conduct an institutional assessment to determine organizational maturity level	Forest Department organizational structure and operational procedures.	Established project management tools and techniques from experienced PMO practitioners and experts. Online literature and academic journal reviews.
To conduct an analysis to determine the most appropriate type of PMO for the organization	Personal interviews with the CFO of the FD and focus group discussions with Forest Officers that have project management experience and any other additional stakeholders. Survey will be conducted to determine how many officers have project management experience.	Online research on PMOs. This includes project management templates and videos.
To propose the roles and responsibilities of the PMO in order to determine its effectiveness and its contribution to	Self	Online articles and journals, project management websites, blogs, SlideShare presentations, PMBOK

achieving the department's mandate		
To determine the resources required to establish a PMO at the FD	Self	PMO offices, journals, online articles, government reports, PMBOK, and other project management texts.
To design an implementation plan for the establishment of a PMO for the Department	Self	Journals, online articles and presentations, project management books, PMBOK, established PMO websites, and offices
To determine a set of KPIs to measure PMO performance	Self Interview with CFO	PMO books and offices, journals, online articles, website search

3.2 Research methods

Research methods as defined in the Cambridge Online Dictionary (Dictionary cambridge.org) is “a particular way of studying something in order to discover new information about it or understand it better.” Walliman, 2011 identified research methods as tools and techniques for conducting research. Whereas research refers to an activity that involves discovering in a somewhat structured manner, things that were unknown to the researcher. Research methods are the techniques used in facilitating research. Furthermore, they provide the tools that guide the researcher in ways to collect, sort, and analyse information as a means of determining or deriving conclusions. As with all activities, the quality of results is dependent on the rigor by which the research is conducted.

Research methods provide the specific details of how one accomplishes a research task (procedures and methods); It provides specific and detailed procedures of how to initiate, carry out, and complete a research task by mainly focusing on how to do

it. Research methodology deals with general approaches or guidelines to conducting research. It provides the principles for organizing, planning, designing, and conducting research, but it cannot tell you in detail how to conduct a specific, individual research.

There are wide ranges of tools available to researchers. However, their use is guided by the type of enquiry. For the purposes of this project, the research methods used were primarily Analytical, Deductive & Inductive, and Descriptive: Survey/Interview research methods in addition to Literature review.

3.2.1 Analytical method

The analytical method is a process that combines the Scientific Method with the use of formal process to solve any type of problem. This method involves the in-depth study and evaluation of available information in an attempt to explain complex phenomenon. Analytical research is primarily concerned with testing hypothesis and specifying and interpreting relationships, by analyzing the facts or information already available. There are nine (9) distinct steps that comprise this method. These are:

1. Identify the problem to solve.
2. Choose an appropriate process.
3. Use the process to hypothesize analysis or solution elements.
4. Design an experiment(s) to test the hypothesis.
5. Perform the experiment(s).
6. Accept, reject, or modify the hypothesis.
7. Repeat steps 3, 4, 5, and 6 until the hypothesis is accepted.
8. Implement the solution.
9. Continuously improve the process as opportunities arise.

3.2.2 Deductive & Inductive method

Deductive method

According to the Merriam-Webster Online dictionary (www.merriam-webster.com), it is a method of reasoning by which concrete applications or consequences are deduced from general principles. A deductive approach is aimed at testing theory. Thus, it is concerned with developing a hypothesis (or hypotheses) based on existing theory, and then designing a research strategy to test the hypothesis. Sneider & Larner, 2009 stated that the deductive research approach explores a known theory or phenomenon and tests if that theory is valid in given circumstances. It has been noted that “the deductive approach follows the path of logic most closely. The reasoning starts with a theory and leads to a new hypothesis. This hypothesis is put to the test by confronting it with observations that either lead to a confirmation or a rejection of the hypothesis.”

Inductive method

An inductive approach according to (Gabriel, 2013) is concerned with the generation of new theory emerging from the data. It usually uses research questions to narrow the scope of a study. Furthermore, it tends to focus on exploring new phenomena or at previously researched phenomena from a different perspective. Creswell and Plano Clark (2007) stated that the inductive method takes a “bottom-up approach, using the participants’ views to build broader themes and generate a theory interconnecting the themes” (p. 23). Inductive approaches are generally associated with qualitative research.

3.2.3 Descriptive method: Survey/Interview method

Descriptive research is defined as a research method that describes the characteristics of the population or phenomenon that is being studied. This methodology focuses more on the “what” of the research subject rather than the “why” of the research subject. In other words, descriptive research primarily focuses

on describing the nature of a demographic segment, without focusing on “why” a certain phenomenon occurs. In other words, it “describes” the subject of the research, without covering “why” it happens. There are three types identified; however, this research utilized the below stated to achieve its objective.

Survey

‘Surveying’ is the process by which the researcher collects data through a questionnaire (O’Leary, 2014). A ‘questionnaire’ is the instrument for collecting the primary data (Cohen, 2013). Survey method is based on the questionnaire prepared for the participants.

Interview

An ‘interview’ is typically a face-to-face conversation between a researcher and a participant involving a transfer of information to the interviewer. Interviews are conducted in qualitative research and occur when researchers ask one or more participants general, open-ended questions and record their answers. The use of interviews is beneficial in several aspects of the research. Firstly, they aid in determining the story behind a participant’s experiences. Additionally, they also facilitate the researcher’s in pursuit of in-depth information around a topic. Interviews may be useful to follow-up with individual respondents after questionnaires are administered if for instance a researcher aims to further investigate their responses according to (McNamara, 1999). In qualitative research specifically, interviews are used to pursue the meanings of central themes in the world of their subjects. McNamara further stated that the main task in interviewing is to understand the meaning of what the interviewees say. Usually open-ended questions are asked during interviews in hopes of obtaining impartial answers, while closed ended questions may force participants to answer in a particular way (Creswell, 2012; McNamara, 1999).

Chart 3 Research Methods (Source: Author)

Objectives	Research methods		
	Analytical	Deductive-Inductive	Descriptive
To conduct an institutional assessment to determine organizational maturity level	This method was used to assess the current project management maturity status of the FD. Additionally, the Six sigma standards were used as references and baseline standards.	This method is applied by testing the tools and techniques used to assess the maturity status of the organization.	This method was used to assess the current organizational structure and existing documents.
To conduct an analysis to determine the most appropriate type of PMO for the organization	The analytical method was used to study and understand the general roles and responsibilities of a PMO within an organization.	This method was used to compare the characteristics of the different PMO's, as a means of determining the most appropriate one for the FD.	

<p>To propose the roles and responsibilities of the PMO in order to determine its effectiveness and its contribution to achieving the department's mandate</p>	<p>This method facilitated the in-debt analysis required to define the roles and responsibilities to be assigned to the PMO.</p>	<p>This method was used to gain deeper insight into the roles and responsibilities of the different PMO's. This was then used to categorize these responsibilities based on their applicability to PMO at the FD.</p>	<p>This method was used to obtain an understanding of current roles or prevailing conditions and how they could be altered or improved at the FD.</p>
<p>To design an implementation plan for the establishment of a PMO for the Department</p>	<p>This method served with the revision of literature as well as to act as a guide in development of an appropriate implementation plan for the PMO at the FD.</p>	<p>Based on data that was collected from the research, this method was used to determine and outline a new outcome.</p>	<p>This method was used to obtain information and record the responses from the FD. Additionally, it serves to provide insight to the plan and as well to obtain consensus on the plan.</p>

To determine a set of KPIs to measure PMO performance	This method was used to obtain information and experiences of established PMOs and serve as a guide for the development of appropriate KPIs.	This method was used to review existing documents.	
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3.3 Tools

Collecting data is vital to every research project. Obtaining accurate, systematic and reliable data and information requires the use of instruments, devices or apparatus. Thus, tools are defined as the instruments employed as means for collecting data. As Patidar (2015) pointed out, tools need to be strong enough to support what the evaluations find during research. The selection of suitable instruments or tools is of vital importance for successful research. Different tools are suitable for collecting various kinds of information for various purposes. The researcher may use one or more of the tools in combination for his/her purpose. Some of the common tools involve interviews. An interview refers to a one and one meeting with a stakeholders or group of stakeholders. A focus group refers to a small structured group meeting consisting of 5 to 20 participants.

The tools used in this research include: focus group meetings, inquiry forms (questionnaire, checklist score-card), expert judgement, scheduling tools, analytical techniques, and Lean six sigma maturity model.

Chart 4 Tools (Source: Author)

Objectives	Tools
To conduct an institutional assessment to determine organizational maturity level	Lean six sigma maturity assessment model
To conduct an analysis to determine the most appropriate type of PMO for the organization	Analytical technique Meetings Interviews Expert judgment
To propose the roles and responsibilities of the PMO in order to determine its effectiveness and its contribution to achieving the department's mandate	Focus group Meetings (stakeholder consultation) Expert judgment Analytical technique Interviews Online PMO templates
To design an implementation plan for the establishment of a PMO for the Department	Focus group meeting (Stakeholders input) Online PMO research templates Experts advice Scheduling tools
To determine a set of KPIs to measure PMO performance	Expert judgement Expert advice

3.4 Assumptions and constraints

The PMBOK defines assumptions as “an actor in the planning process that is considered to be true, real, or certain, without proof or demonstration.” Assumptions are regarded as statements that are taken for granted or are

considered true, even though they have not been scientifically tested. These are accepted as being true based on logic or reasons, but without proof or verification. Patidar (2013) surmised that an assumption is a realistic expectation which is something that we believe to be true. However, no adequate evidence exists to support this belief. Assumptions are external factors for which the intervention is not responsible, but that are very important for the realisation of the results, the project purpose and the overall objective. They are outside direct intervention control, but vital for achieving a successful implementation.

Whereas a constraint is regarded as “A limiting factor that affects the execution of a project or process” (PMBOK, 2013, Fifth edition, pg. 124). The Cambridge online dictionary further stated that a constraint is something that controls what you do by keeping you within particular limits.

There were several assumptions made and constraints identified whilst conducting this research. These are listed and further stated in chart 5.

The assumptions include:

- An appropriate PMO will improve both project and programme performance at the FD.
- Establishing a PMO will attract more projects at the FD.
- The parent organization (Ministry) as well as the department’s management team is receptive to PMOs.
- A PMO, once established, will improve financial sustainability of the FD through better management.
- A PMO, on the hierarchy of the FD organizational structure, will help it be more effective with its projects.

The Constraints include:

- The FD may not make available adequate information to support the research particularly if it is deemed sensitive.

- Identifying the most appropriate Maturity Assessment Model for this research
- Scope of the research as well as time
- Receptiveness of management for the value of PMO on the FD's organizational structure

Chart 5 Assumptions and Constraints (Source: Author)

Objectives	Assumptions	Constraints
To conduct an institutional assessment to determine organizational maturity level	Given the FDs increasing mandate, they will require a PMO to support the volume and size of projects that the department is expected to manage.	Identifying the appropriate PMO for the FD.
To conduct an analysis to determine the most appropriate type of PMO for the organization	Proposing a PMO within the hierarchal structure of the FD will increase effectiveness of project implementation as well as improve programme performance.	Management may not be receptive to a PMO and as such undervalue their importance to the organization.
To propose the roles and responsibilities of the PMO in order to determine its effectiveness and its contribution to achieving the department's mandate	The FD would be more receptive to the Proposal of an appropriate and non-complex PMO.	Time available to conduct research will be sufficient to complete research as well as within scope.
To design an implementation plan for the establishment of a PMO for the Department	Development of an implementation plan will improve efficiency of project implementation through sound methodology and approaches	The time available to develop the plan may not be sufficient.

Objectives	Assumptions	Constraints
	that will increase financial sustainability of the organization.	
To determine a set of KPIs to measure PMO performance	The FD has a culture of measuring performance and are highly receptive to use and benefits of indicators.	Time and scope

3.5 Deliverables

The PMBOK defines a deliverable as a unique and verifiable product, result, or capability to perform a service that must be produced to complete a process, phase, or project. Yakubovitch (2015) stated that a deliverable is something of value. Deliverables refer to a project management term for the quantifiable goods and services that will be provided upon the completion of a project. Furthermore, deliverables can be tangible or intangible parts of a development process and are often specified functions or characteristics of the project.

The deliverables resulting at the end this research are as follows: These are also presented in the chart 6 provided below.

1. An Institutional Assessment Report
2. A Maturity Assessment
3. A Roles and Responsibility Plan
4. A Systematic Implementation Plan for the PMO
5. A Set of Key Performance Indicators

Chart 6 Deliverables (Source: Author)

Objectives	Deliverables
To conduct an institutional assessment to determine organizational maturity level	A Maturity Assessment. This report will provide an assessment of the Forest Department to determine its maturity level.
To conduct an analysis to determine the most appropriate type of PMO for the organization	An Institutional Assessment Report. Report will include a comparison chart showcasing different PMOs.
To design an implementation plan for the establishment of a PMO for the Department	A Systematic Implementation Plan for the PMO. This plan will include implementation arrangements.
To determine a set of KPIs to measure PMO performance	A Set of Key Performance Indicators. This will identify the measurements that can be used to assess sustainability and performance of the PMO over time.

4 RESULTS

For the purposes of this research, a questionnaire was prepared based on the OPM3 framework methodology to better understand and determine the Belize Forest Department's project management capabilities as well as to measure the maturity or stage of development against best practices. While this methodology assesses portfolio, programs, and projects through the administration of five hundred and eighty-five questions (585), the questionnaire used and adopted was limited to projects only. Thus, a total of one hundred twelve (112) questions, across the ten knowledge areas and five project management phases, comprised the questionnaire. Project management maturity was assessed and determined based on the quantity in percentages of the four (4) processes featured within the model.

A selection of four (4) Forest Officers were identified to participate in an interview. Furthermore, they were asked to complete the questionnaire. This selection was based on two pre-determined criteria. Firstly, these persons are middle management personnel and have been employed for more than ten (10) years, therefore, they had the requisite institutional knowledge. They were also responsible for managing either one of three programs that exist within the FD and as well had served as officer-in-charge of one of six FD ranges. In addition, these persons had previously managed one or more projects prior to this exercise, thus, they had some project management experience which served to facilitate the ease of understanding of the concepts.

The results of the maturity assessment demonstrated that the department's rating as it pertained to the first stage of process improvement of standardization, stood at 99%, indicating that it is highly competent in the documentation of policies and processes, training of personnel and institutionalization of structures that promote the consistent implementation of work methods. The data further demonstrated that the department's competency, as it relates to the measurement process, is rated at 47% followed by a rating of 27% for that of controlling processes. The data further indicated that the department's maturity in the improvement process is rated at 4%

demonstrating considerable weakness in this area compared to that of the other processes. The results of the assessment can be found annexed to this document. Furthermore, an analysis based on the ten knowledge areas are presented below.

As it relates to Integration Management, the results revealed an interesting pattern. The questions assessed spanned across three project phases of planning, execution, and control. 100% of the respondents indicated that the Forest Department's strength lies in standardizing and documenting project management processes. Furthermore, at least 25% of the respondents indicated that the department had demonstrated competency as it relates to the other process areas of measurement, control and improvement. It was determined that standardization was rated at 25%, followed by measurement which received a rating of 6%. The department's capabilities in control and improvement both received a rating of 2% strongly suggesting that there is considerable weakness as it pertains to processes in this knowledge area.

In the category of Scope Management, all the questions were directed towards the planning phase. The results showed that all the respondents determined that the FD has competency in standardization process at 92%. The department's capability in measurement was determined to stand at 42% while the competency level stood at 8% for control.

In the category of Schedule Management, all questions once again were concentrated on the planning phase. The results showed that the respondents demonstrated strong agreement for the standardization process which was rated 100%. Measurement process group was rated at 42%. Half of the respondents indicated that the department had demonstrated competency in two of the processes as it relates to "sequencing activities process" and "estimating activity resources" while one respondent carried this belief as it relates to "defining activities process." As it relates to Cost Management, the questions were limited to the project planning phase. The results indicated that all the respondents determined that the

department had 100% capability in the standardization process while measurement received a score of 50%. The respondents further rated the department's ability in the control process group at 25% while improve process was rated at 8%. The FD has over the past 10 years managed at least two projects annually. Therefore, it is evident that they are quite comfortable with planning, estimating, and budgeting project costs.

In the category of Quality Management, the results indicated that the department demonstrates 100% competency in the standardization process. This result was consistent for both the planning and execution project phases. The respondents rated the department's capability in measurement at 63% across the two project phases cumulatively; whereas the control process received a 25% score.

Referencing the category of Resource Management, the results indicated that standardization of processes was ranked at 100% among respondents. This was closely followed by measurement process, which received a score of 67%. Respondents indicated that as it relates to planning of resources, the department has not only mastered the documentation of process, but has also done the same in identifying and developing the requisite metrics to measure its progress. The responses were split 50/50 in regard to competency in developing team progress and managing team progress. Furthermore, 25% was allotted to the department's competency in controlling process in the knowledge area.

As it relates to Communication Management, respondents highlighted the FD's competency in standardization. The department's ability to measure was rated at 25% followed by controlling process at 17%. It is worthy to note here that the scores attributed to measurement and control has resulted due to the score provided in the planning phase of project management.

In the category of Risk Management, the questions were solely focused on the planning phase of project management. The results indicated that the respondents

rated at 100% for the standardization process. The respondents rated the department's capability at 50% as it relates to measurement; whereas, its competency in controlling process received an overall score of 33%. There was no demonstrated capability in the improvement process.

As it relates to Procurement Management, the respondents indicated 100% competency in the standardization process based on the questions assessed in the planning and execution project phases. The results further demonstrated that the department is rated at 50% maturity for the measurement and control processes while its maturity for the improve process stood at 13%. The department received a score of 0% as it relates to the improvement stage as none of the stakeholder competency in this area.

In the category of Stakeholder Management, the results indicated that the department maturity for standardization was rated at 100% across the two-project management phase of initiation and planning phases. The department's maturity was scored at 75% in the measurement while control was rated at 13%. The department received a score of 0% as it relates to the improvement stage as none of the stakeholder competency in this area.

Following the conclusion of the assessment, the results demonstrated the strengths, weaknesses, and improvement opportunities of Belize Forest Department. Moreover, it further underscores the need for the department to establish a PMO.

In an effort to identify and select the most appropriate PMO as per the second FGP objective, an analysis of the different types of PMO is tantamount. There are three (3) basic PMO types as previously cited. Each PMO type was analyzed subsequently. The PMOs are: Supporting, Controlling, and Directive. The criteria used to guide the process of selecting a PMO for the FD was based on two (2) main defining aspects of a PMO. The two (2) aspects are, first the PMO responsibility as

a governance and standardization resource body. Secondly the range of PMO authority or control it possesses.

The three basic types of PMO

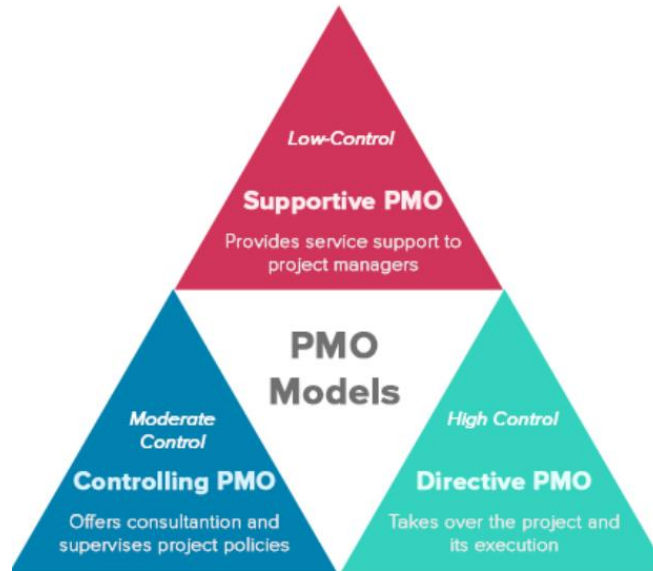


Figure 5: Three Types of Project Management Office (PMO)

Source: PMBOK Guide

After presenting the details of the different PMO types, targeted stakeholders were asked to select which PMO would be most suitable for the department based on a short activity. The responsibilities and levels of control of each PMO were distributed among the target group as previously stated. Following the discussion, the results indicated that most stakeholders preferred to have a PMO with some aspects of supporting characteristics as well as the benefits of a project governance which corresponds to a hybrid PMO.

In an effort to reinforce the role and potential impact of the PMO in accordance with the OPM 3 approach, the roles and responsibilities of the selected PMO must be articulated and established. Once this task has been completed, it will lay the foundation and demonstrate the PMOs autonomy to foster awareness throughout the organization.

Furthermore, while outlining the roles and responsibilities of the PMO is a critical process in the development of this FGP, equally so is the importance to implement the systems and processes highlighted in this research. This allowed for a natural Segway to the following objective of determining an implementation plan for the FDs PMO.

Lastly, it must be noted that not all PMOs are the same; thus, underscoring the need to determine individual assessment processes regarding its additional value. In an effort to determine this, stakeholders were presented with several examples. An activity was conducted which afforded them the opportunity to select the most appropriate values and suggest modification to suit the FD's circumstances.

4.1. Assessment of Maturity for the Forest Department

Belize's history is predicated on the trade of Mahogany (*swetenia macrophylla*). Thus, the Forest Department is one of the oldest, but among the most important departments in the Government of Belize as is evidenced by the historical contribution of forests to the country's gross domestic product (GDP). However, the prominence of the forest sector has diminished over the last several decades, with tourism assuming the lead economic pillar of Belize. Despite this shift, the country's economic development remains inextricably linked to its natural resource base, underscoring the importance of sustainable management of the country's forest resources.

In the past, the Forest Department constitution reflected a structure whose main responsibility was management of forest for the extraction of timber; however, as time elapsed, the FD underwent changes in its administrative structure in the early 2000s to a more programmatic approach to management that has since been refined over the years as seen in the figure 5 below in an effort to address changes in shifting national priorities, as well as to strategically position itself in the globalization era.

Forest Department Programmatic Organizational Chart

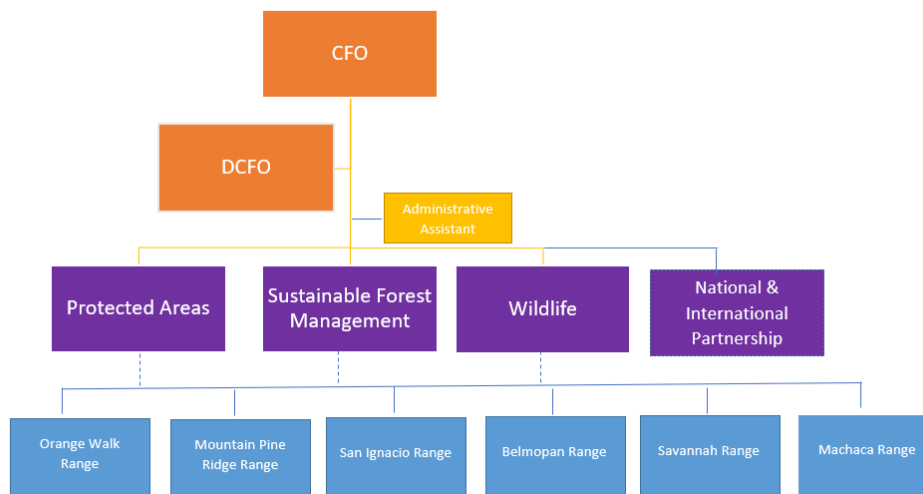


Figure 6: Forest Department Organizational Chart

Source: Author

With the migration of forest management for the sole purpose of timber exploitation to include its other values such as biodiversity conservation, watershed management, wildlife, protected areas management, and provision of ecosystem services, to mention a few, the department's mandate increased significantly. Additionally, with the growing global concern for the environment, Belize became signatory to several MEAs of which the FD serves as focal point. This new thrust made the Forest Department a GOB agency more adapted to the current trends in global development, and also provided the opportunity for the FD to become financially sustainable.

The FD's growing mandate resulted in significant strain on its resources. In an effort to address this situation, the FD has developed and implemented numerous projects with the support of its forest officers with varying levels of success. The forest officers, as indicated in figure 5 above, are typically assigned to manage the department's programs or assigned to head any of the six range offices. These Forest Officers, as highlighted in an analysis of the FD, are traditionally trained as natural resource managers. A review of the natural resource management (NRM)

program academic pathway at the national university revealed that project management training is provided to students at a basic level. As it relates to those officers who have sought professional training at international universities, they have reported that their training in project management was more robust as compared to the national university. It was noted that Forest Officers do receive additional 'on the job' training through short-term courses on an annual basis. Participation of officers is often voluntary and is based on the availability of resources. Nonetheless, project management training is not a requirement at the department, but rather a skill that is acquired over time. It is worthy to note that project management responsibilities are typically assigned to Forest Officers due to the seniority of their post.

Unfortunately, despite the department mandate's considerable growth over the years; its annual budgetary allocations have not increased to match the increasing demand. As a result, the department has experienced tremendous challenges in executing its mandate due to unavailability of resources. Thus, the development and execution of projects at the department has largely been viewed as an avenue to obtain the requisite resources, training and equipment that the department ardently requires not only to accomplish its domestic and regulatory functions, but also in executing its environmental obligations as outlined in international agreements.

Over the years, the department has attracted and implemented numerous projects of varying sizes and with different levels of success. In a report of biodiversity expenditures, Herrera et al. (2018) determined that over USD \$151 m has been invested in the FD. The investments albeit considerable, has not translated into considerable success at the program level and they remain largely dependent on external funding to further the mandate of the FD. Considering this, a maturity assessment was conducted on the department in order to determine its project management maturity. The organizational project management maturity model was deemed most appropriate considering the programmatic organizational structure of the FD.

In order to apply the model, significant time was spent in investigating it in an effort to adequately gain an understanding the OPM 3 contents as well as its application. Considering the FD's unique constitution, it was immediately determined that the OPM 3 would require some modification.

The next phase would entail performing the assessment. Thus, a survey was administered to a determined set of participants. The survey is comprised of 488 questions; however, the survey administered to participants was modified to 112 questions covering only the portion that represented projects. These questions covered all phases of project management (Initiation, Planning, Execution, Measurement & Control, and Closing) as prescribed by the PMBOK, 6th edition as well as 10 knowledge areas as seen in the Chart 7 seen below.

Chart 7 Distribution of Survey Questions (Source: Author)

Knowledge Areas	Process Groups				
	Initiating	Planning	Executing	Monitoring & Control	Closing
Integration		4	4	4	
Scope		16			
Schedule		16			
Cost		12			
Quality		4	4		
Resource		4	8		
Communication		4	4		
Risk		12			
Procurement		4	4		
Stakeholder	4	4			

Interviews with the key stakeholders for this research indicated their willingness to perform a maturity assessment as a prerequisite to any targeted improvement efforts. However, it must be noted that the during the interview, time was taken to familiarize the participants with the terminology to ensure that the content was understood well.

A maturity assessment for the FD would require a step-by-step analysis of its processes and organizational structure. The findings would enable the administration to determine the strengths and weaknesses of the organization as well as its potential for future development.

Thus, in order to achieve the aforementioned, the OPM 3 approach was applied and ultimately embraced by the FD. The OPM 3's architecture, as highlighted in the theoretical framework, is comprised of the following:

- Best practices in organizational project management;
- The constituent capabilities that are necessary for the existence or attainment of best practices;
- Observable outcomes signifying the existence of each relevant capability;
- Key performance indicators (KPIs) which are the means of measuring each outcome;
- Model context including the OPM process and the stages of process improvement. The stages of process improvement listed from most basic to most advanced consists of the following:
 - Standardized
 - Measure
 - Control
 - Improvement (continuous)

According to Fahrenkrog et.al (2003), the OPM3 model uses the logic of these stages to provide a roadmap that enables the organization to see which Best Practices are specifically associated with organizational project management maturity, where the organization falls on the continuum of maturity, and how it might embark on the journey to organizational improvement. Furthermore, the OPM3 not only uses the Process Improvement stages to organize its content, it also builds upon the process framework for Project Management, as defined in the *PMBOK® Guide*, and extends that framework to the additional domains of

Program and Portfolio management. This framework permits further refinement of the model so users can understand the implications of every Best Practice in terms of its potential applications to any or all of these three domains that, as a whole, comprise organizational project management.

The assessment conducted, based on the results of the survey as indicated by the radar, demonstrated that the FD is rated at the first stage of process improvement as seen in figure 6. This was further supported by the results of discussion with survey participants who indicated that they adhered to an adopted the policies and procedures used in project management as a condition from project donors. The donor's policies and procedures for project management has typically provided the blueprint for the different project phases as well as the knowledge areas.

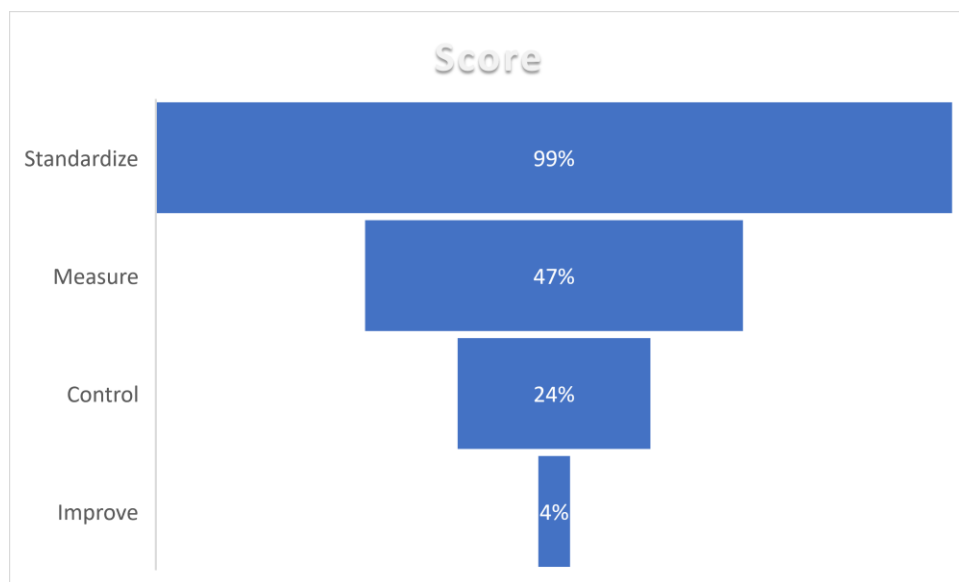


Figure 7: Project Management Maturity of the Forest Department

Source: Author

Knowledge Area	Process Improvement Processes								
	Standardize	Percentage	Measure	Percentage	Control	Percentage	Improve	Percentage	Total
Integration	12	25.0%	3	6.3%	1	2.1%	1	2.1%	48
Scope	15	23.4%	6	9.4%	1	1.6%	0	0.0%	64
Schedule	16	33.3%	6	12.5%	1	2.1%	0	0.0%	48
Cost	12	25.0%	6	12.5%	3	6.3%	2	4.2%	48
Quality	8	25.0%	5	15.6%	3	9.4%	0	0.0%	32
Resource	12	25.0%	8	16.7%	3	6.3%	0	0.0%	48
Communication	8	25.0%	2	6.3%	2	6.3%	1	3.1%	32
Risk	12	25.0%	6	12.5%	4	8.3%	0	0.0%	48
Procurement	8	25.0%	5	15.6%	4	12.5%	1	3.1%	32
Stakeholder	8	25.0%	6	18.8%	5	15.6%	0	0.0%	32

Figure 8: Process Improvement Stage Results per Knowledge Area

Source (Author)

Furthermore, the results per knowledge area is shown in Figure 7. As it relates to knowledge areas, the results demonstrated that the FD across the board is at the first stage of process development while it can be concluded that there is a good opportunity towards progress in the second stage of process improvement in measurement.

Process Improvement	Knowledge Area										Total	Overall Score
	Int.	Scope	Sch.	Cost	Qual.	Res.	Coms.	Risk	Pro	Stk.		
Standardize	12	15	16	12	8	12	8	12	8	8	111	99%
Measure	3	6	6	6	5	8	2	6	5	6	53	47%
Control	1	1	1	3	3	3	2	4	4	5	27	24%
Improve	1	0	0	2	0	0	1	0	1	0	5	4%
Total	17	22	23	23	16	23	13	22	18	19		
Coefficient	48	64	48	48	32	48	32	48	32	32		
Score	35%	34%	48%	48%	50%	48%	41%	46%	56%	59%		

Figure 9: OPM3 Scorecard per Knowledge Area for the Forest Department

Source (Author)

Based on the results above, the FD shows considerable competency as it relates to Stakeholder Management. The FD has developed strong relationships with the NGO community over the years particularly through its co-management agreements for the management of PAs vis a vis the Protected Areas as well as its Law Enforcement Programs. It is also worthy to note that there are several PAs that form

the border with communities and there have been several environmental issues that require partnership with community leaders. These results demonstrate that the FD is strongest as compared to the other knowledge areas. It must also be noted that these results demonstrate competency in the FD's ability in identifying stakeholders and engaging them and incorporating their input. This conclusion was drawn based on the fact that the focus of these questions was primarily rooted in the planning project management phase.

Another area that is demonstrable is that of Procurement Management. It is believed that the procedures and policies that are intrinsic with donor agencies as well as the GOB are institutionalized, and that the FD has become accustomed to these.

4.2. Analysis of PMOs

Based on an analysis performed of the different types of PMOs, information reviewed both from the PMBOK and other project management offices, it was determined that there are three (3) types of PMOs that are characterized by their degree of influence and control over the projects within the organization. These are: Supportive PMO, Controlling PMO, and the Directive PMO.

4.2.1 The Supportive PMO

A supportive PMO acts as a repository to organizations. This PMO is primarily one that provides on-demand expertise to the organization using its templates, access to information, best practices, and sharing of data collected from other projects. This type of PMO is quite suitable for organizations where projects are done successfully, yet not with firm control systems, and there is the need for additional control. However, these have a very low degree of control in projects. (Reiling, J. 2014).

4.2.2 Controlling PMO

Controlling PMOs are regarded as the auditor of the company or organization. They act as a measuring board to demonstrate whether organizational tools, processes,

and standards are applied in projects. This type of PMO provides support and compliance through various means. It also requires that the support be used by adopting specific project management frameworks, methodologies; templates, forms, tools, and PMO controlled set of rules. It ensures conformance to governance among others. The degree of control from this type of PMO is moderate. (Reiling, J. 2014).

4.2.3 Directive PMO

This is perhaps the PMO type with the highest control of all three (3) PMO's. As the name implies, this PMO essentially "takes over" the project by providing project management experience and resources to manage the projects. As the organizations undertake projects, the PMO assigns a professional Project manager for each of the projects, creating a consistency of reporting from each project manager back to the directive PMO. By this means, a higher level of professionalism is implemented with each project. This type of PMO is more effective for large organizations that run various projects concurrently. (Reiling, J. 2014).

In the analysis of all three PMOs it was realized that, each type of PMO has its function and impact based on the type of organization, its structure, its culture, and most importantly, what its objectives are for the overall success of that organization. It is only when an organization is carefully identified, and its peculiarities researched and understood that, one can propose a suitable PMO for that organization.

In this case study, the Forest Department's structure and culture undeniably requires a PMO. This is based on the results from the respondents as highlighted in the results chapter. The PMO that was chosen based on the results and the analysis of different PMO types based on the current status and culture of FD is that of a hybrid of two PMO's (Supporting & Controlling PMO's). The general consensus from the stakeholders indicated a medium whereby their department enjoyed the full

characteristics of a Supporting PMO with that of a somewhat strong compliance governance characteristic of a Controlling PMO.

After reviewing the collective responses from interview participants and the results from the maturity assessment, it was indicated that information sharing was a chronic issue that was affecting project performance, and ultimately the department's programs. The department demonstrated weaknesses as it relates to project integration management which entail: alignment of deliverable due dates and project life cycles, creation and use of appropriate knowledge to and from the project and making integrated decisions regarding key changes impacting the project to mention a few. The fact that information sharing among staff is a challenge underscores the weaknesses observed in this knowledge area. The participants emphasized that information sharing is largely unilateral from a bottom up approach. Additionally, that it is ad hoc in that there are often vaguely defined lines of communication and that information is not timely, all of which when combined increase the risk of projects not being completed on time nor achieving its objectives.

Another issue that was commonplace among interviewees was the need for greater integration among projects, especially considering the impact on departmental programs. As previously stated, the projects are traditionally designed to strengthen the department's ability to execute its mandate. The process involved in developing projects is rather unique, since the officers charged with implementing are not the project's designers. Once a need is identified, the Chief Forest Officer, with the assistance of development partners, prepares a project concept. The development partner is largely involved in the first couple stages of the project phases and the department is engaged at different stages during these phases. Thus, this approach attributes to the weaknesses observed in the project scope management. The interviewees indicated that they are often not intimately involved in the early stages of project development. Consequently, it is commonplace for overlaps to exist among projects, especially considering that there are no guarantees that the project proposal will be approved by the donor. Furthermore, given that there is no

established PMO or other mechanism in place to collectively examine projects at a landscape level, these overlaps are often neglected. As a result, resources are often not maximized to the benefit of the department.

Additionally, the participants indicated that when projects are implemented, they are often not in the same geospatial location. As previously mentioned, the FD has a central hub as well branch offices. When projects are initiated, even though Forest Officers are engaged as project managers, additional staff are required throughout the project lifespan. The department does not have room to accommodate additional staff. As a result, office space is identified outside of the department. They also indicated that establishing a PMO at the FD would serve to improve corporation among program as it would allow for sharing of resources across the department as opposed to any particular program.

Furthermore, given that project funds originate from different donors, the policies and procedures that govern projects differ. Considering this, interviewees indicated that they are inconsistencies among project reports. For these reasons stated above, they would definitely benefit from a supportive PMO, since this would allow the department to share resources in an effort to maximize impact of project activities. Beyond a PMO that creates a certain level of standardization, the interviewees also expressed a desire to have a PMO that also facilitates accountability.

The analysis of different types of PMO revealed that the FD, at its current maturity, would not be in a position to support a completely directive PMO. It was assumed that a Directive PMO might be required when the FD obtains a higher maturity level or when it demonstrates higher competency in the knowledge areas. Currently, the FD is unaware of many of the basic project management processes according to findings of this research.

On the other hand, using the same results of the maturity assessment and the current operational culture of FD, together with the analysis of the functions of the

other two types of PMO's, thus Supporting PMO and Controlling PMO, it was realized that a marriage of both would be most suitable. The consensus expressed was that the FD preferred to be supported by the provision of an on-demand expertise to the organization. The use of templates, and the sharing of data collected from other projects, constitute the inherent characteristics of a Supportive PMO. However, the staff also wanted the FD to observe a culture of governance and best project management practices. For these, it was determined that a Controlling structure PMO would be best suitable. The common objectives the PMO needs to satisfy are expressed below:

1. Standardize terminologies
2. Implement a common methodology/Establish project methodology
3. Provide common supporting tools
4. Project tracking
5. Introduce effective repeatable project management processes
6. Improve levels of project success within the organization

Once the PMO satisfies these objectives, then it should be a starting point for FD's PMO. This analysis and results above described led to the choice of a hybrid of both PMO's. Chart 8 featured below highlights the PMO types and their functions as well as the needs expressed by the FD.

Chart 8: PMO Assessment Template (Source: Author)

PMO Type	Characteristics	FD Needs	Level of Control	Maturity Level
Supportive	Provide templates Provide Best practices Provide training Share resources	Support with tools & templates and sharing of resources from other projects	Low	1 – 2

		Improve information flow		
Controlling	Provide governance and conformance	Encourage the adherence of best practices and conformance to standards to improve project success and improve accountability	Moderate	2 – 3
Directive	Directly manage projects Provide strong governance frameworks		High	3 – 4

4.3. Roles and Responsibilities of PMO

Based on the maturity assessment, the organizational culture and the recommended PMO type, the roles and responsibilities are proposed for the hybrid PMO for the Forest Department. These roles and responsibilities originate from the needs assessment and improvement potentials envisaged for the FD. While it is important to clearly outline the roles and responsibilities of the PMO, there is great merit in simplicity, especially considering that this proposal represented the first attempt at establishing a PMO at the FD. It is also important that the PMO is practical to improve the chance of success. The responsibilities of a PMO have been extensively researched. Although the list can potentially be quite lengthy, the main role is to outline process standards by providing a blueprint to establish standard performance measures based on the organization's goals, mission, and objectives; as well as to provide requisite tools and procedures to achieve this. This is prescribed in three (3) key areas:

1. Establishing Project Methodologies;
2. Project Tracking; and
3. Project Support

4.3.1 Establishing Project Methodologies

Perhaps one of the major roles of a PMO rests in its ability to provide a road map for the implementation of a project. This function is considered foundational to the organization. A PMO is required to make an estimate of the size of the project, the requisite time and resources, as well as to outline the project methodologies through a series of PMO tools and instruments. While, these are outlined below, it is worthy to note that considering the FD's project management maturity, it would be appropriate to start with a simple methodology for its operation. This consideration takes into account not only the maturity, but also the colocation of the department and its organizational culture. Additionally, despite the department's project management experience under the guideline of different donors, the organization has never had any single internal structured methodology of operating projects. Project management methodologies can be rather complex, require a sophisticated set up, and may be very costly. Consequently, the recommended methodology comprises of a simple, basic project management process.

Project Charter: This would provide an overall vision of the project inclusive of its goals and objectives to the all stakeholders;

Workplans: This would contain detailed schedules of activities, milestones and the deliverables of the project teams and identify the resources available;

Governance Plan: This provides an outline of the roles and responsibilities to be assigned to each member of the project team;

Work Breakdown Structure: This defines the specific deliverables due from each team member, at each stage of the project;

Communication Plan: This establishes the protocol, procedure and methods to communicate project information and issues among members of the team;

Forms and Templates: These would simplify and standardize communication, record keeping, and reporting; and lastly,

Risk Analysis: This lists out potential problems and chances of deviance from the project methodology, the probability of such occurrences, their possible impact, and possible solutions.

4.3.2 Project Tracking

The responsibility of project tracking in a PMO is paramount. This is one of the roles of the Project manager. The lack thereof of any progress or delays and their possible impact on the deliverables of a project, can be traced to its tracking. This is very critical to every project. Based on researched cases, a PMO of the size anticipated for the Forest Department, normally should track its project in three (3) steps:

Collecting project status information: This would entail the routine gathering from all project team leaders, updated work plans, issues, change orders and any other relevantly recorded project data. Consolidation and analysis of the data collected: This mechanism would allow all data collected to be analysed and the results compared to a benchmark set using the predetermined guidelines, and then communicated to the management team for their review and possible further action.

Corrective Action: This process allows for an official endorsement of the corrective decisions decided by the management team through a process of change management.

The PMO has the responsibility of gathering and archiving project experience and reusable data for future projects. This would form part of its methodology to close the project. The Project manager is charged with this responsibility

4.3.3 Project Support

In addition to defining, maintaining and managing the project processes, one critical responsibility of the PMO is to provide support for the smooth execution of the project. This focal area can be rather menacing, given the scope of responsibilities from multiple inputs from internal and external resources. For this reason, it is an important task of the PMO.

The PMO should act as a centralized customer centric office that not only plan, negotiate and analyse projects, but also serve to redress the project related concerns of all stakeholders.

Furthermore, the PMO is responsible for developing a team of competent project managers through training and mentoring. The project managers should therefore, ensure implementation and maintenance of the project methodology and retain its teams' focus on the tasks at hand. This would satisfy a critical need of the FD, considering as previously stated, that there are no existing internal mechanisms to ensure that project managers/forest officers obtain the requisite training beforehand and build consistent expertise in project management. Thus, resulting in varying levels of project success.

One important function of a PMO is its role in providing critical training to team members as it relates to relevant project management tools and techniques applied to the project. Additionally, the PMO in its supportive role, can also serve to facilitate in-house consultancy services geared at specific project issues that would be administered to the project team as the need arises.

Lastly, the PMO also supports the organization by developing a cadre of competent project managers through its continuous training sessions. These project managers would then ensure that the implementation of a project is done effectively and consistently following the established methodologies set out by the PMO through

consultation with its stakeholders. This will not only contribute to consistent quality and delivery of projects, but also to ensure that department programs are strengthened in the process.

The Roles and Responsibilities of the proposed PMO at the Forest Department are elaborated in the chart 9 below:

Chart 9 PMO Roles and Responsibilities (Source: Author)

Thematic Area	Responsibility	Role	Creator	Approval
Establishing project methodologies	Create Project Charter	Project Manager	Project Executive/Board	Project Sponsor
	Create Work Plan	Project Manager	Project Manager	Project Executive
	Develop Governance Plans	Project Manager	Project Manager	Project Executive
	Develop WBS	Project Manager	Project Manager	Project Executive
	Create Communication Plan	Project Manager	Project Manager	Project Executive
	Create Forms & Templates	Project Manager	Project Manager	Project Executive
	Prepare Risk Analysis Plan	Project Manager	Project Manager	Project Board

Project Tracking	Collect project status information Consolidate & Analysing of data collected. Implementation of corrective action, if required	Project Manager	Project Manager	Project Executive
Project Support	Provide a centralized location for all project data, for sharing and analysing project development. Develop competent project managers through training & mentoring	Project Executive	Project Executive	Project Executive

4.4. Implementation Plan for the PMO

The maturity assessment results coupled with the organizational culture were regarded as contributing factors in determining the most appropriate PMO for the Forest Department. In consideration of previous input such as the roles, scope and outcomes of the proposed PMO identified, its success is contingent on an appropriate implementation plan. In elaborating this plan, some other considerations included the following.

While the maturity assessment indicated that there is room for improvement across the spectrum of knowledge areas, there is particular priority needed as it relates to integration, scope, and communication management. An interesting convergence

was also observed with these and the issues that were highlighted as priorities among interviewed staff. Staff emphasized the importance of improving communication within the department. It was evident that while there are clear mechanisms within the immediate project environment, the same could not be said for the meaningful exchange of information across programs in the department. The general consensus indicated that information sharing between these faucets is done at best on an ad hoc basis. This leaves very little room for interdepartmental collaboration.

In addition to an implementation plan, consideration was also given as to the name and placement of the PMO. Throughout this study, it has become clear that there is a common perception among staff that projects are viewed as an externality to the department, which has negatively impacted the project's timeline and overall success. Projects are viewed as a means to an end rather than as a tool or facility in assisting the department in advancing its mandate. Although it may appear as pure semantics in considering a name other than Project Management Office, the PMO may have a better chance of success if its name appears as a Programme Management Office. Although, there may be some merit in further exploring the origins of this belief, it is worthy to note that the PMO would still maintain its functions as described in earlier sectors.

Placement of the PMO in the organizational structure is also critical to its implementation as well as to its effectiveness in the department. Staff indicated that in order for the PMO to achieve its intended impact, sufficient authority must be provided at the onset. Hence, it is proposed that it be placed above all programs at this point. Although figure 9 has been drafted based on the consensus of senior staff, one of the requirements for the PMO implementation is to conduct a consultation with all stakeholders that will be impacted by the PMO. These stakeholders include the entire staff of the FD as well as those at the Ministerial level. The intention is not only to ensure that all stakeholders are aware of the PMO and its purposes, but also to obtain consensus on the placement of the PMO among

other things. This step is critical, especially since establishing anything new requires change, and though change is inevitable, resistance is expected. Without proper engagement of stakeholders, implementation of the PMO will surely be delayed if not altogether derailed.

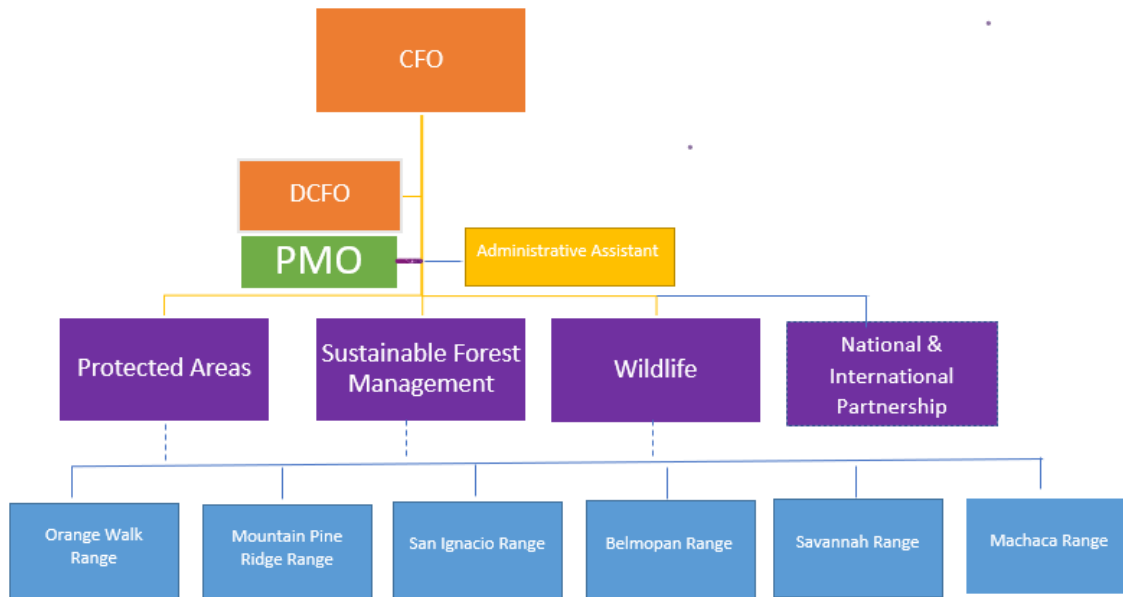


Figure 10: Updated Forest Department Organizational Chart

Source (Author)

Secondly, a thorough review of the skill levels available at the department to support the new structure of the PMO has to be fully ascertained. The department's strategic and other relevant planning documents require review; so as to establish the PMO's priorities and targets, in order to determine an appropriate timeline for implementation. An analysis of the department's records, as it relates to implemented projects and current records, as well as projects in the pipeline is also necessary as it provides information on the size of PMO required.

Once the skills have been successfully identified and the need assessment completed and approved, the processes and procedures that are required to implement the methodologies set out for this PMO can be established. These processes and procedures are carried out using the processes templates developed specifically for the FD. Templates that will facilitate reporting, and communication

are very important tools that all team leaders should be trained to use and understand. Furthermore, following the establishment of the PMO, reviews will be required from time to time to re-evaluate the project management office and learn from mistakes and processes or procedures that didn't work. The results would serve to inform administration and other executives of the PMO's progress, facilitate decision making and also ensure that the PMO remains current and relevant to the FD.

The implementation plan presented below will be executed in different phases as seen below. The proposed plan is also designed to be accomplished within three months. This short timeline may seem ambitious; however, it is intended to serve as a pilot to demonstrate how to mobilize a strategic document and as well serve as an introduction to a result-oriented framework.

Chart 10: PMO High Level Implementation Plan (Source: Author-Adapted from PM Majik)

Phase	Item #	Strategy	Task description	Result	Schedule
1	1.0	Project Planning and Initiation	1.1 Finalize vision 1.2 Finalize scope 1.3 Finalize project plan 1.4 Socialize and obtain consensus on PMO structure	Project Plan, consensus on vision and mission	Week 1-2
	2.0	Assess current environment	2.1 Conduct an assessment of resources (human,	SWOT Analysis Readiness Report	Week 3-4

			<p>financial and physical)</p> <p>2.2 Identify use of project Tools</p> <p>2.3 Conduct organizational readiness assessment to determine organizational culture that will affect PMO</p>		
2	3.0	PMO Governance	<p>3.1 Define organizational structure and staffing</p> <p>3.2 Establish prioritization processes</p> <p>3.3 Determine change management processes</p>	Organizational structure and staffing requirements Governance & Escalation Structure	Week 5-6
	4.0	Establishing Methods & Standards	<p>Determine:</p> <p>4.1 Standard project deliverables</p> <p>4.2 Project initiation processes</p> <p>4.3 Estimating processes</p> <p>4.4 Project plan templates</p> <p>4.5 Project milestone standards</p>	Project management methodology framework	Week 7-8

			4.6 Scope management processes 4.7 Change management processes		
	5.0	Resource Management	5.1 Determine recording system 5.2 Determine resource forecasting system 5.3 Determine and define resource management process	Resource Management Plan	Week 9
	6.0	Training & Mentoring	6.1 Train key staff in use of enterprise tools and processes 6.2 Conduct training in use of project level tools, templates and processes	Training module/requirements	Week 10-11
	7.0	Deployment	7.1 Pilot PMO 7.2 Implement enterprise tools and processes 7.3 Testing of project level tools, templates and processes	Program assessments PMO Review	Week 12

4.5. Key Performance Indicators

Recognizing that a project has many moving parts, underscores the importance of measuring the timeliness, budget, quality, and effectiveness along the way. Key performance indicators (KPIs) are an index reflecting success. In project management, KPIs consist of various specific measurement tools for indicating how well teams are achieving specific goals as prescribed by the project document or as set by the organization. Consequently, pursuant to a PMO for the FD, it is critical to ensure that there are processes in place to track key metrics in order to demonstrate the value that is being added by the installation of the PMO through the improvement of project delivery.

Determining the most appropriate suite of KPIs for the PMO is largely dependent on the type of PMO and its areas of responsibility. As indicated in previous sections, the most appropriate type of PMO based on its project management maturity and organizational culture, is a hybrid between supporting and controlling PMO. As a result, the PMO's primary responsibility is one of support through the provision of standard templates that should be adopted across the department to streamline reports among other things. The supporting role of the PMO also seeks to introduce project management tools to the team to contribute to greater project success. As it relates to its controlling role, the PMO is should be able to track its performance. Besides ensuring that the KPI's relevance to the FD, they should also be aligned to stakeholder requirements; thus, socialization to obtain consensus is essential. Furthermore, a suitable timeframe for the collection and report on the KPIs must be established.

In an effort to demonstrate value of the PMO to the FD at a glance, a KPI dashboard is proposed. Project sponsors and stakeholders will want to see and appreciate a concise summary of the metrics to monitor progress. Designing and easy to understand dashboards supporting information accessibility and sharing.

Collectively, KPIs are a powerful management tool to bring about organization-wide success. Keeping track of accurate metrics from varying teams can identify where more direction is needed or where incentives, plans, and other resources, such as training, should be allocated.

Chart 11: FD PMO KPI Listing (Source: Author)

Focal Area	Goal	KPI	Timeframe
Process KPI	Improved Project Management	-Task backlog -Time elapsed between the occurrence of deviations, risks, conflicts and/or corrective actions -Cost performance index -Schedule variance	Weekly/monthly Quarterly Quarterly Quarterly
Project Success	Improved Resource Management	-% of resources shared across organization -% of resources working on support activities	Quarterly Quarterly
Benefits	Increased benefits realized to the organization	% of budget in strategic entities -Number of projects completed within timeframes allocated -Number of strategic projects completed as a percentage of the total number of strategic projects.	Quarterly Annually compared to other periods

		- number of people working on multiple projects.	
	Creating a culture of efficiency	-Percentage of timesheets and project reports submitted on time - Percentage of stakeholder/sponsor review ratings in the top quartile	Monthly/Quarterly Annually

Chart 12 Basic PMO Dashboard (Source: Author)

Project Name	Sponsor	PM	Budget USD	Actual	ETC	Variance	Benefits	Executive Summary	Scope	Schedule	Costs	Benefits
Project 1	Sponsor 1	PM 1	\$1000	\$700	\$200	\$100	\$500	Project reporting green. Delivery on schedule for Nov. 8 th				
Project 2	Sponsor 2	PM 2	\$10,000	\$9000	\$150	\$50	\$200	Reporting amber as delays due to overrun testing.				
Project 3	Sponsor 3	PM 3	\$8000	\$7880	\$80	\$18	\$2	Project on track to delivery by October 30 th .				
Project 4	Sponsor 4	PM 4	\$5000	\$4500	\$400	\$100	\$1500	Project reporting green. There is a slight delay but still scheduled to deliver by				

								November 15 th .				
Project 5	Sponsor 5	PM 5	\$2000	\$2250	\$50	\$100	\$100	Reporting red as major problems with product.				

Legend

Green	Project is within tolerance	
Amber	The project budget or timescale is +/- 10% and the scope is within tolerance;	
Red	The project budget and timescale is +/- 10% or project budget or project timescale is +/- 15% or scope is carrying unplanned changes	

5 CONCLUSIONS

A maturity assessment was conducted using a modified questionnaire based on the organizational project management maturity model. The aim of this assessment was to determine the department's maturity within the domains and process improvement stages in relation to a set of Best Practices contained in the standard. The assessment was used to establish a common understanding of the FD's strengths and weaknesses in the application of project management discipline as well as the organization's willingness to apply the discipline. Specifically, the results of the assessment demonstrated the FD's capabilities across two (2) domains which includes the ten (10) knowledge areas as well as across the project management process groups. The result of the assessment is used to guide the selection of a suitable PMO for the FD. Based on results obtained from the maturity assessment, it was concluded that:

1. The maturity level assessment exercise concluded an index of one (1) on 4 -point scale. The index of one (1) on the stages of process improvement (Standard, Measure, Control and Improve) for OPM3 corresponds to **Standardized** Maturity level 1 which is at the entry point of the scale. This is not to be interpreted as a general weakness.

This score indicates that the FD has demonstrated strong capabilities to document project management processes. These results also further demonstrated that the FD has exhibited considerable capabilities on the next process improvement level. If the department so chooses, it is poised to increase its maturity to the next process improvement stage of measure given improvement in targeted knowledge areas.

2. The score variability resulting from the maturity assessment highlights the FD's strengths and weaknesses across the knowledge areas sphere. For instance, the FD demonstrated strength in the areas of stakeholder, procurement and quality management; whereas it demonstrates the need for further strengthening in the areas of scope and integration management.

Furthermore, the results also highlight the need for further training in developing personnel to acquire expertise in project management. Even though the department has been implementing projects for more than a score, PMs were often outsourced, and it was not until the last decade that PMs were recognized within the department. As was evidenced through review of the department's institutional assessment that level of training is not a pre-requisite for the Forest Officer posts. The officers that have received some minimal training have acquired these through certification courses. Success of the PMO will be contingent on ensure that staff training is prioritized.

3. Based on the analysis of the maturity assessment interview with key staff, coupled with review of the department's strategic planning documents, it was concluded that the FD requires a PMO.

The selected PMO is deemed suitable and should fit within the current structure of the organization as proposed and should use its structured organizational strengths to support the current status of the department. This is in recognition of the culture, size and lack of trained and skilled personnel in FD at this time to manage the new PMO process.

4. As per the results of the maturity assessment, three (3) basic types of PMO were analyzed. The analysis of the capabilities and levels of control on an organization on each type of the 3 PMO's contributed to the findings that the most suitable PMO type for the FD at the point is a hybrid comprising of a Supporting and Controlling PMO.

The projects implemented have been subjected to the policies and procedures as prescribed by the donor agencies. With the establishment of a hybrid PMO, the FD will be able to receive greater benefits in building a mass of project management professionals. Furthermore, it will be able to improve overall program management with the development and adoption of standardized templates for department's wide

use. This hybrid PMO will also afford the FD the opportunity to start homing in on use of these tools to determine its impact on the organization as a whole.

5. The roles assigned to the selected PMO, should start with the three basic and widely accepted project management responsibilities of, Establishing project methodologies, Project tracking, and Project Support, for FD's projects. These are the main responsibilities identified as critical for the FD at this stage. Other roles, as may become necessary, would then fall under these main roles and responsibilities herein identified.

As it relates to the roles that were identified, no specific individuals selected for these roles. The FD currently retains its project managers to either manage other projects, programs, or its range offices. While it does have in-house capacity in the form of project managers, the expertise required for the implementation of the PMO would initially need to be outsourced until the critical mass is built over time.

6. Establishing a PMO for the FD is commensurate on having a good implementation plan. The introduction of a PMO is novel to the FD as such stakeholders' interests must be carefully attended. Thus, adequate consultation must be carried out with stakeholders to introduce the plan, obtain feedback, and support for the plan. As one of the beneficiaries to the PMO, staff must not only support the plan, there must be ownership.

The FD maturity is in its infancy, therefore any implementation proposals for its PMO should be carefully and strategically weaved into the existing planning framework of the organization. This would help galvanize support for its PMO.

Stakeholders' input into the implementation plan of FD's PMO suggested, outlining the different stages of implementation of the PMO, from consulting with stakeholders to finalize the vision, establishing project governance through to training of staff, determining resource requirements, and finally deployment.

7. Based on the results of interviews with key staff, the placement of the PMO within the organizational structure was highlighted as a major area of concern. The placement of the PMO is tantamount to ensure that the appropriate level of authority is given to the PMO to ensure that it not provide support, but also facilitate its enforcement functions.

8. The results of maturity the assessment also facilitated the development of key performance indicators that are established to track project progress, as well as to demonstrate the value of the PMO to the FD overtime. The KPI selected will assist the FD in determining the percentage of financial sustainability achieved by the programs with the establishment of the PMO. Not only do PMO leaders need metrics and measures to report their organization's activities accurately, they also need to "sell" the PMO's usefulness and value to the organization.

9. Finally, the relevance of this research as proven is to ascertain that indeed the FD does require a PMO to improve project and program management by increasing financial sustainability, strategic alignment, implementation of standards, and norms in the execution of organizational mandate. Establishing a PMO will introduce a more structured and result-oriented framework approach to the FD. Additionally, the program coordinators will have access to standardized templates that can be used within programs. With the aid of clear communication channels, the projects and programs will be better able to integrate workplans to ensure that department priorities are reflected in project plans. As such, a PMO should be established to support and control the operations and project management process of FD.

6 RECOMMENDATIONS

Based on the research and assessment conducted on the Forest Department project management maturity and its potential of increasing financial sustainability of programs through this platform, the following are recommended:

1. For the purposes of this study, the questionnaire was modified; thus, to provide a more holistic maturity of the FD, the assessment should be repeated. Considering the FD's maturity, a maturity assessment should be conducted, in the first instance on an annual basis to increase the current maturity. This assessment should ideally be initiated through the PMO vis a vie the project Executive and Project manager. This would allow the FD to further identify its strengths and needs over time and enable the PMO to determine an appropriate course of actions. When the optimum score is attained, the assessment should thereafter be carried out in two-year intervals.

2. A monitoring and evaluation plan should be developed and enforced following the implementation of the PMO. It is important for the PMO to conduct internal assessments or audits on a semi-annual basis in its first two years, and thereafter on an annual basis. This assessment would provide the Project leadership and FD's administration an opportunity to analyse its relevance, in order to determine whether or not it is achieving its objectives and intended impacts. Furthermore, it will also serve to advise the administration and other relevant stakeholders on the appropriateness of the PMO, if and when the FD would be better served by another PMO type based on the projects it embarks. While it is assumed that the Forest Department's core functions will remain unchanged, the department's overall mandate may continue to grow, especially considering the dynamic global outlook.

3. Establishment of this proposed PMO is a new concept to administration and staff of the FD. Thus, it is of vital importance that in its initial stages of implementation that the right persons with requisite expertise lead the charge. Thus, a review panel/task force should be established. This task force should be comprised of FD's

program leads, a representative from the Ministry's administrative team and a development partner led by the CFO. They will be charged with the task of reviewing the existing role of the PMO, determining its adequacy, and making recommendations for improvement. These will be carried out in an effort to better streamline the roles and responsibilities of the PMO, to ensure that there is clarity of responsibilities and their relevance to the particular projects.

4. A more detailed implementation plan may be required for the PMO. Based on the FD's culture, the success of the plan is contingent on ownership and buy-in from the staff. Thus, it is important that the implementation plan be introduced and socialized at the earliest to all stakeholders by the project manager through various consultations, and group meetings. This would facilitate consensus building to agree on a smooth transition to the successful implementation of the PMO. The process should be carried out by senior management.

5. The administration of the FD should consider adopting a PMO as demonstrated in the updated organizational structure, as well as implementing the PMO in the proposed timeline, in an effort to improve and optimize the results of its future projects considering that it has three very large projects in the pipeline for 2020. The PMO is needs to be given the right level of authority to ensure that it is effectively implemented and to realize its goal of improving financial sustainability across the programs.

6. As indicated previously, the PMO should take steps to develop an M&E Framework within the first quarter of its implementation. In addition, the Project Manager should include in that plan a review of the KPIs to ensure that they are adequately capturing critical information on project performance to demonstrate the PMO's effectiveness. The list included in the study was not exhaustive so the PM can update as deemed necessary.

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8 APPENDICES

Appendix 1: FGP Charter

PROJECT CHARTER

PROJECT CHARTER	
Date	Project Name:
July 29, 2019	Proposal for the establishment of a Project Management Office for the Belize Forest Department (FD)
Knowledge Areas / Processes	Application Area (Sector / Activity)
<p>Knowledge areas:</p> <ul style="list-style-type: none"> ▪ Integration Management ▪ Scope Management ▪ Schedule Management ▪ Cost Management ▪ Quality Management ▪ Resources Management ▪ Communication Management ▪ Risk Management ▪ Procurement Management ▪ Stakeholder Management <p>Process groups:</p> <ul style="list-style-type: none"> ▪ Initiating ▪ Planning ▪ Executing ▪ Monitoring and Controlling ▪ Closing 	Environmental Management
Start date	Finish date
July 29, 2019	January 31, 2019

Project Objectives (general and specific)

General objective: To propose the establishment of a suitable project management office model in the Belize Forest Department to improve project and programme management that will support an increase financial sustainability by 5% through strategic alignment, implementation of standards and norms in the execution of organizational mandate.

Specific objectives:

1. To conduct an institutional assessment to determine organizational maturity level.
2. To conduct an analysis to determine the most appropriate type of PMO for the organization.
3. To determine the roles and responsibilities to be assigned to the PMO as well as its location on the hierarchy on FD's organizational management.
4. To design an implementation plan for the establishment of a PMO for the Department
5. To determine a set of KPI to measure PMO performance.

Project purpose or justification (merit and expected results)

The FD is a governmental institution under the Ministry of Fisheries, Forestry, Environment, Sustainable Development, and Immigration, responsible to manage forest and forest resources on public lands and protected areas. Belize, known for its high biodiversity has one of the highest percentage forest cover at 57% of the country under protected area status. Of the 103 protected areas in existence, the FD has management and oversight of more than half.

The department has a hierarchal chart of that identifies the roles and responsibilities of staff but uses a programmatic approach to implement its mandate. In addition to its regulatory duties, the Department is also responsible for the implementation of several Multi-Lateral Environmental Agreements (MEAs) such as the Rio Conventions. Every signatory that has ratified these Conventions are required to abide by the rules and regulations therein. Following a National Capacity Self-Assessment (NCSA) in 2005, it was observed that there exist critical challenges such as poor harmonization of sectoral policies, weak land use planning, poor coordination among national institutions; poorly developed environmental information systems, and low level of understanding of ecosystem approach to resource management that collectively act as critical constraints to effective implementation of Rio Conventions. To address these issues, the Department has received financial assistance from various international organizations, in the form of projects to obtain the necessary resources to fulfil its reporting requirements and effectively execute it overall mandate. Despite the investments over the years, the Department still faces critical resource limitations and considering that the annual budget it receives from Central Government will not increase, it must identify

these resources to strengthen its ability to execute its mandate. Typically, staff for the management of projects are sourced from within the department. These are usually senior Forest Officers whose expertise in project management are limited. Additionally, there is no standard methodologies to project management that are used across the department. Communication is done in an ad hoc manner even within programmes. Thus, there is no integrated approach to project management hence where synergies exist, the ability to coordinate and collaborate with other projects to optimize resources and implement joint work programmes for deeper impact is not realized.

Therefore, this proposal seeks to demonstrate how a PMO can be used to improve project performance through greater synergies across programmes in order to efficiently execute its departmental mandate. Additionally, this project seeks to determine the most appropriate project management model for the institution in an effort to ensure financial sustainability for the implementation of policies and programmes, track results and improve the implementation of programmes. The overall intended benefit of this process is presentation of an appropriate improved success rate of projects that are managed by the department. Additionally, to introduce appropriate methodologies that will improve financial sustainability of the organization to implement its policies and programs. The lesson can then be shared with other departments within the ministry or upscaled at the Ministry level. Additionally, it will also provide an adequate framework to monitor the progress of projects and programmes by monitoring project-performance governance, providing training, and setting or defining standards.

Description of Product or Service to be generated by the Project – Project final deliverables

The intended deliverables for this project include:

1. An Institutional Assessment Report
2. A Maturity Assessment
3. A Roles & Responsibility Plan
4. A systematic implementation plan for the PMO
5. A set of Performance Indicators

Assumptions

1. It is assumed that the FD will maintain its institutional framework following the development of its strategic plan.
2. It is assumed that the project will be implemented within the timeframe established by the University.
3. It is assumed that the Department has established a record management system and that the data will be made readily available.

Constraints

1. The Forest Department is currently developing a strategic plan with the aid of all its senior officers; therefore, persons may be unavailable to provide information or partake in surveys etc...which may impact the data collection process as well the quality of the information provided.
2. Given that the projects managed by the Department are not colocated, obtaining information according to timetable may be challenging.
3. Records are managed differently across projects and the quality or availability of information may require considerable time to review impacting the timeline.
4. The timeline established by UCI may be insufficient to gather sufficient data to conduct a thorough analysis of results.
5. The resources required to conduct a proper analysis in support of the development of good results may not be available to support additional tasks.

Preliminary risks

1. If the Ministry's CEO is not supportive of this project concept, time required to engage in research activities such as data collection, may not be approved which will impact the quality of the deliverables.
2. If the CFO does not recognize the potential benefits from this exercise, the support from his staff in providing data for literature review or availing time for interviews will have a severe impact on the availability of good results and overall quality deliverables of the project as well as to impact the project's timeline.
3. If there is inadequate documentation available or not provided in a timely fashion, this may affect the project's timeline as well as the quality of the deliverables.
4. If there are too many projects to analyze, it may become too large of a scope for one person to manage and may not be completed within the established timeline.

Budget

- The costs associated with publishing and shipping the FGP physical copy to UCI.
- Transportation costs

See matrix below

Description	Unit	Quantity	Cost	Total
Travel	gal	160	\$2.60	\$416
DSA	days	15	\$30	\$450
Printing	unit	3	\$50	\$150
Professional services	unit	1	\$300	\$300
Shipping and handling	unit	1	\$50	\$50
Telephone	Minutes	3	\$50	\$150
				\$1666

Milestones and dates		
Milestone	Start date	End date
Final Graduation Project	July 29, 2019	January 31, 2020
FGP Start	July 29, 2019	July 29, 2019
1 Graduation Seminar	July 29, 2019	September 6, 2019
1.1 FGP Deliverables	July 29, 2019	August 30, 2019
1.1.1 Charter	July 29, 2019	August 2,2019
1.1.2 WBS	July 29, 2019	August 2,2019
1.1.3 Chapter I. Introduction	August 5, 2019	August 9,2019
1.1.4 Chapter II. Theoretical framework	August 12, 2019	August 16,2019
1.1.5 Chapter III. Methodological framework	August 19, 2019	August 23,2019
1.1.6 Annexes	August 5, 2019	August 30,2019
1.1.6.1 Bibliography	August 26, 2019	August 30,2019
1.1.6.2 Schedule	August 5, 2019	August 30,2019
1.2 Graduation Seminar approval,	September 2, 2019	September 6, 2019
2 Tutoring process	July 29, 2019	October 2, 2019
2.1 Tutor	September 9, 2019	September 11, 2019
2.1.1 Tutor assignment	September 9, 2019	September 9, 2019
2.1.2 Communication	September 10, 2019	September 11, 2019
2.2 Adjustments of previous chapters (if needed)	September 12, 2019	September 18, 2019
2.3 Charter IV. Development (Results)	September 19, 2019	November 22, 2019
2.4 Chapter V. Conclusions	November 25, 2019	November 29, 2019
2.5 Chapter VI. Recommendations	December 2, 2019	December 6, 2019
Tutor approval	December 6, 2019	December 6, 2019
3 Reading by reviewers	December 9, 2019	December 27, 2019
3.1 Reviewers assignment request	December 9, 2019	December 13, 2019
3.1.1 Assignment of two reviewers	December 9, 2019	December 10, 2019
3.1.2 Communication	December 11, 2019	December 12, 2019

3.1.3 FGP submission to reviewers	December 13, 2019	December 13, 2019
3.2 Reviewers work	December 16, 2019	December 27, 2019
3.2.1 Reviewer	December 16, 2019	December 27, 2019
3.2.1.1 FGP reading	December 16, 2019	December 26, 2019
3.2.1.2 Reader 1 report	December 27, 2019	December 27, 2019
3.2.2 Reviewer	December 16, 2019	December 27, 2019
3.2.2.1 FGP reading	December 16, 2019	December 26, 2019
3.2.2.2 Reader 2 report	December 27, 2019	December 27, 2019
4 Adjustments	December 30, 2019	January 24, 2020
4.1 Report for reviewers	December 30, 2019	January 9, 2020
4.2 FGP update	January 10, 2020	January 10, 2020
4.3 Second review by reviewers	January 13, 2020	January 24, 2020
5 Presentation to Board of Examiners	January 27, 2020	January 31, 2020
5.1 Final review by board	January 27, 2019	January 28, 2019
5.2 FGP grade report	January 29, 2020	January 31, 2020
FGP End	January 31, 2020	January 31, 2020

The Forest Department which was established in the 1927, and is to date, one of the oldest departments in the Government of Belize (GOB). The Department is a regulatory agency that is responsible for the management of forests and forest resources in Belize on national lands and in protected areas. This is achieved through the implementation of several laws, policies and strategies which included the Forest Act, Wildlife Protection Act, National Protected Areas System Act, National Biodiversity Strategy and Action Plan, National Fire Policy. In addition, the Department acts as focal point to several the Rio Conventions and several international Multilateral Environmental Agreements (MEAs). These include the Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification and Land Degradation (UNCCD), Ramsar Convention on Wetlands to mention a few. As a signatory to the Rio Conventions, the FD is responsible to fulfil the terms and obligations therein. The Department has established several programmes and has six district offices across the country in order to successfully implement its mandate. These include Protected Areas, Sustainable Forest Management, and Wildlife programmes. The Department had attempted to establish a new programme titled National and International Partnerships to strengthen coordination across programmes, projects and other institutions among other things, but it was never successful.

Stakeholders

Direct Stakeholders:

Chief Forest Officer, Wilber Sabido
 Deputy Chief Forest Officer, Marcelo Windsor
 Forest Officers

Indirect Stakeholders:

Chief Executive Officer, Dr. Percival Cho
 Finance Officer, Lorraine Smith
 Association of Protected Areas Organization, APAMO

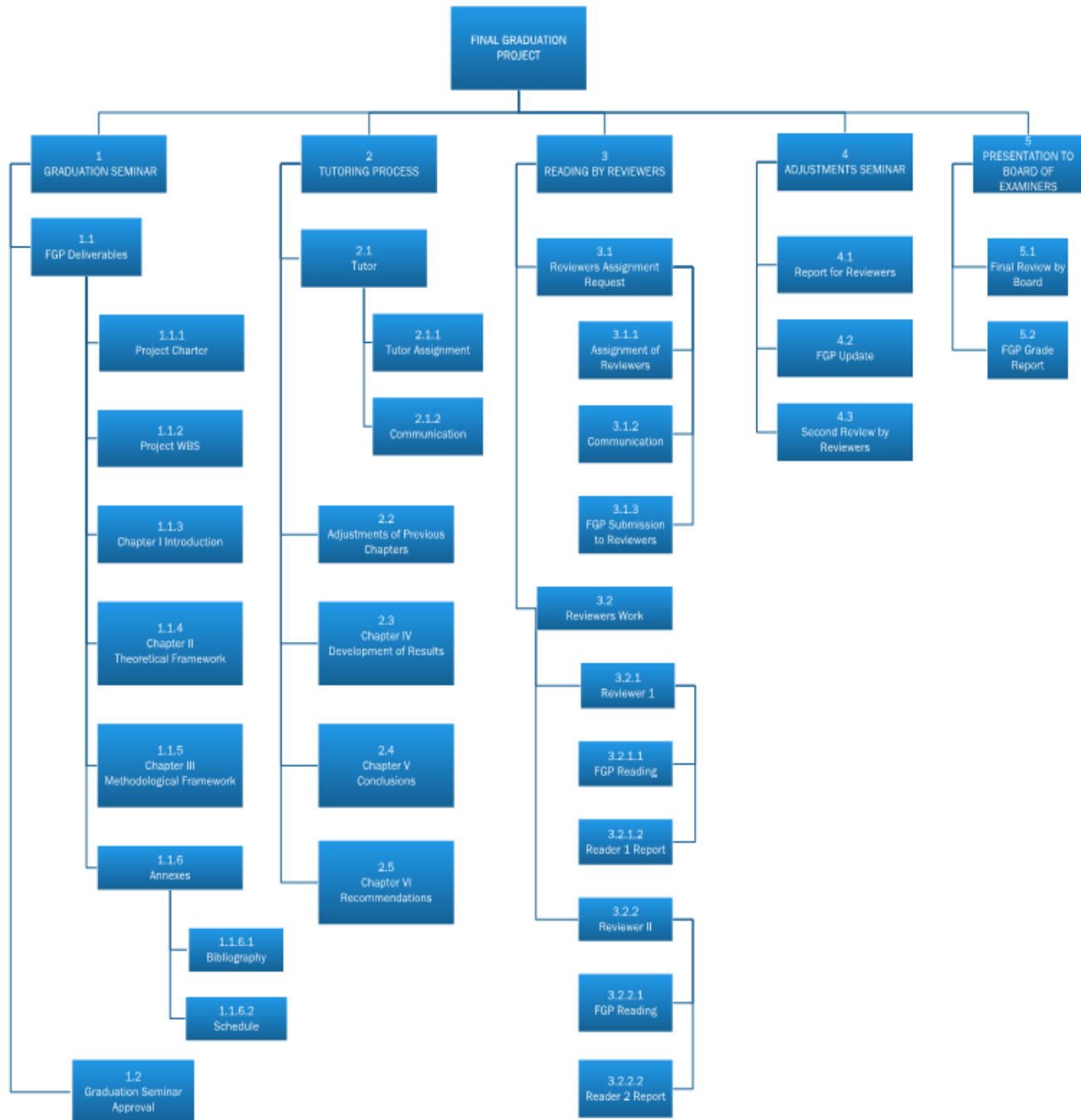
Project Manager: Judene Tingling

Signature:

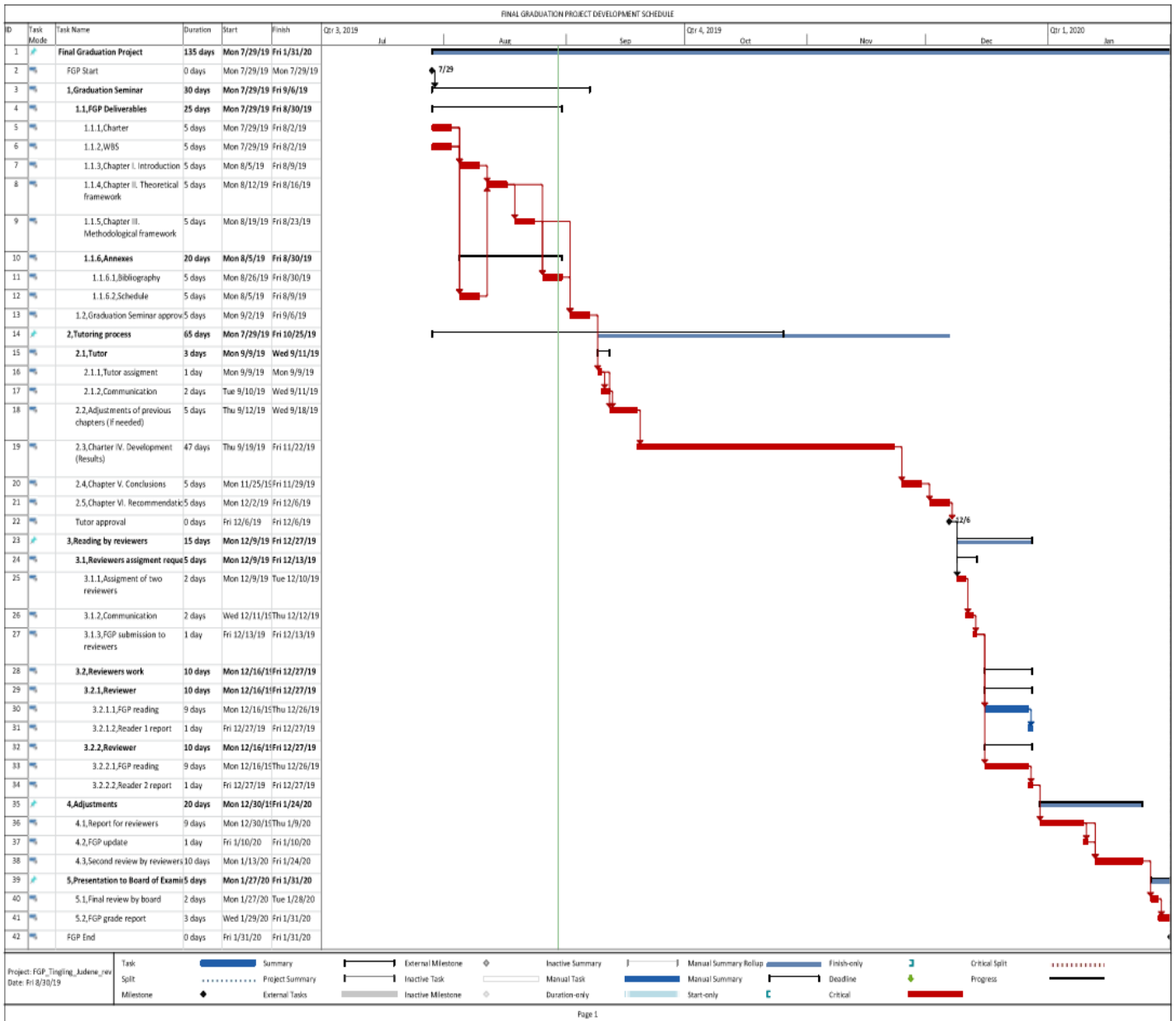
Authorized by:

Signature:

Appendix 2: FGP WBS



Appendix 3: FGP Schedule



Appendix 4: Level of Maturity Questionnaire

Organizational Project Management Maturity Assessment

Student Name: Judene Tingling Linares

This questionnaire contains 112 questions. It is adopted from the Project Management Institute (PMI) Organizational Project Management Maturity Model (OPM3). It is based on best practice which were defined in terms of sequences of "Capability Statements," outcome statements, and key performance indicators. This survey is designed to provide an assessment framework that enable benchmarking with best practice and indicate areas where an organisation can improve. Project management maturity encompasses a broad range of organisational elements that underpin the organisation's project management capabilities. Project management practices, operations, processes, knowledge areas, competencies, and phases are all among dimensions of project management capability (Pennypacker & Grant, 2003).

The self-assessment requires answering a simple yes or no to whether 188 high-level best practices exist in the organisation. The resulting output provides a list of best practices the organisation currently demonstrates and those that it does not. The comprehensive assessment is an evaluation of specific supporting "capabilities" that contribute to the best practices and whether they do or do not exist in the organisation. Therefore, you are required to tick the box for each of the following questions if you or your organization does what the questions asks.

Knowledge Area	No	Best Practice	Question	Yes	No	Note	Process Improvement Stage
Integration Management	1	1020	Does your organization Standardize the Develop Project Management Plan process?			Proj. Mgt Plan includes the processes & activities to identify, define, combine and coordinate the various processes and activities	Standardize
	2	1710	Does your organization Measure the Develop Project Management Plan process?			Process of defining, preparing and coordinating all plan components and consolidating them into an integrated proj. mgt	Measure
	3	2250	Does your organization Control the Develop Project Management Plan process?				Control
	4	2640	Does your organization Improve the Develop Project Management Plan process?				Improve
	5	1230	Does your organization Standardize the Direct and Manage Project Work process?			Process of leading and performing the work defined in the project mgt. plan & implementing approved changes.	Standardize
	6	1920	Does your organization Measure the Direct and Manage Project Work process?				Measure
	7	2460	Does your organization Control the Direct and Manage Project Work process?				Control
	8	2850	Does your organization Improve the Direct and Manage Project Work process?				Improve
	9	1310	Does your organization standardize the perform integrated change control process			Process of reviewing all change requests, approving changes and managing changes to deliverables, org. process assets, proj. documents etc... and	Standardize
	10	2000	Does your organization measure the perform integrated change control process				Measure
	11	2540	Does your organization control the perform integrated change control process				Control
	12	2930	Does your organization improve the perform integrated change control process				Improve

Scope Management	13	7500	Does your organization standardize the plan scope management process?			Scope Mgt. includes processes required to ensure that proj. includes all the work and only work required to complete the project successfully.	Standardize
	14	7550	Does your organization measure the plan scope management process?			Process of creating scope mgt. plan that documents how the project and product scope will be defined,	Measure
	15	7600	Does your organization control the plan scope management				Control
	16	7650	Does your organization improve the plan scope management				Improve
	17	1030	Does your organization standardize the collect requirements process?			The process of determining, documenting, and managing stakeholder needs and requirements to meet	Standardize
	18	1720	Does your organization measure the collect requirements				Measure
	19	2260	Does your organization control the collect requirements				Control
	20	2650	Does your organization improve the collect requirements				Improve
	21	1040	Does your organization standardize the define scope process?			The process of developing a detailed description of the project	Standardize
	22	1730	Does your organization measure the define scope process?				Measure
	23	2270	Does your organization control the define scope process?				Control
	24	2660	Does your organization improve the define scope process?				Improve
	25	1075	Does your organization standardize the create WBS process?			The process of subdividing project deliverables and project work into smaller	Standardize
	26	1085	Does your organization measure the create WBS process?				Measure
27	1095	Does your organization control the create WBS process?				Control	
28	1105	Does your organization improve the create WBS process?				Improve	

Schedule Management	29	1050	Does your organization standardize the define activities process?			Schedule mgt. includes processes required to manage the timely completion of the	Standardize
	30	1740	Does your organization measure the define activities process?			Process of identifying and documenting the specific actions to be performed to achieve	Measure
	31	2280	Does your organization control the define activities process?				Control
	32	2670	Does your organization improve the define activities process?				Improve
	33	1060	Does your organization istandardize the sequence activities process?			Process of identifying a nd documenting relationships among proj. activities	Standardize
	34	1750	Does your organization measure the sequence activities process?				Measure
	35	2290	Does your organization control the sequence activities process?				Control
	36	2680	Does your organization improve the sequence activities process?				Improve
	37	1115	Does your organization standardize the estimate activity resources process?			Process of estimating the number or work periods needed to complete individual activities wit est	Standardize
	38	1125	Does your organization measure the estimate activity resources				Measure
	39	1135	Does your organization control the estimate activity resources				Control
	40	1145	Does your organization improve the estimate activity resources				Improve
	41	1080	Does your organization standardize the develop schedule process?			Process of analyzing activitiei sequences,durations, resource requirements and schedule constraints	Standardize
	42	1770	Does your organization measure the develop schedule process?				Measure
	43	2310	Does your organization control the develop schedule process?				Control
	44	2700	Does your organization improve the develop schedule process?				Improve

Cost Management	45	7520	Does your organization standardize the plan cost management process?			Cost Mgt. includes process involved in planning, estimating, budgeting, managing and controlling costs.	Standardize
	46	7570	Does your organization measure the plan cost management process?			Process of defining how the project cost will be estimated, budgeted, monitored and	Measure
	47	7620	Does your organization control the plan cost management				Control
	48	7670	Does your organization improve the plan cost management				Improve
	49	1100	Does your organization standardize estimate cost process?			Process of developing an approximation of the monetary resources need to complete project	Standardize
	50	1790	Does your organization measure estimate cost process?				Measure
	51	2330	Does your organization control estimate cost process?				Control
	52	2720	Does your organization improve estimate cost process?				Improve
	53	1110	Does your organization standardize the determine budget process?			Process of aggregating the estimated costs of individual activities or work package to establish cost baseline.	Standardize
	54	1800	Does your organization measure the determine budget process?				Measure
	55	2340	Does your organization control the determine budget process?				Control
	56	2730	Does your organization improve the determine budget process?				Improve

Quality Management	57	1130	Does your organization standardize the plan quality management process?			Quality Mgt. refers to processes for incorporating the org. quality planning, managing & controlling project and product quality requirements to	Standardize
	58	1820	Does your organization measure the plan quality management process?			Plan quality refers to process for identifying quality requirements & standards for	Measure
	59	2360	Does your organization control the plan quality management				Control
	60	2750	Does your organization improve the plan quality management				Improve
	61	1240	Does your organization standardize the perform quality assurance process?			Refers to the monitoring and recording the results of executing quality mgt. act. To assess performance and ensure completion of outputs.	Standardize
	62	1930	Does your organization measure the perform quality assurance				Measure
	63	2470	Does your organization control the perform quality assurance				Control
	64	2860	Does your organization improve the perform quality assurance				Improve

Resource Management	65	1090	Does your organization standardize the human resource management process?			Resource mgt. includes processes to identify, acquire and manage resources needed for completion of project.	Standardize
	66	1780	Does your organization measure the human resource management process?			Includes processes of defining how to estimate, acquire, manage and utilize physical and team	Measure
	67	2320	Does your organization control the human resource management process?				Control
	68	2710	Does your organization improve the human resource management process?				Improve
	69	1250	Does your organization standardize the develop project team process?			Processes of improving competencies, team interaction and the overall env. to enhance proj. performance.	Standardize
	70	1940	Does your organization measure the develop project team				Measure
	71	2480	Does your organization control the develop project team				Control
	72	2870	Does your organization improve the develop project team				Improve
	73	1155	Does your organization standardize the manage project team process?			Process of tracking team member performance, providing feedback, resolving issues and managing team changes to	Standardize
	74	1165	Does your organization measure the manage project team				Measure
	75	1175	Does your organization control the manage project team				Control
	76	1185	Does your organization improve the manage project team				Improve

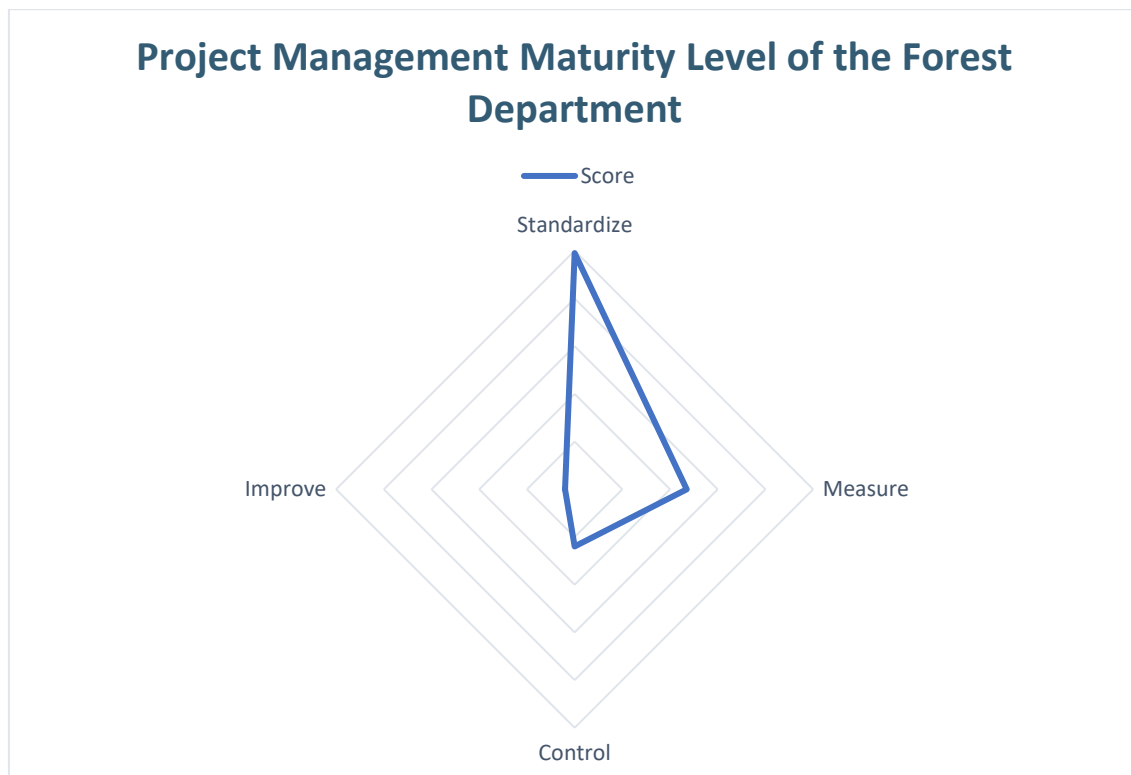
Communications Management	77	1160	Does your organization standardize the plan communications management process?			Comms Mgt refers to developing a strategy to ensure comm is effective for stakeholders.	Standardize
	78	1850	Does your organization measure the plan communications management process?			Refers to process of developing an approach and plan for comms activities based on needs of stakeholders.	Measure
	79	2390	Does your organization control the plan communications management process?				Control
	80	2780	Does your organization improve the plan communications management process?				Improve
	81	1260	Does your organization standardize the manage communication process?			Process of ensuring timely and appropriate collection, creation, distribution, storage, mgt, monitoring and disposition of project	Standardize
	82	1950	Does your organization measure the manage communication				Measure
	83	2490	Does your organization control the manage communication				Control
	84	2880	Does your organization improve the manage communication				Improve

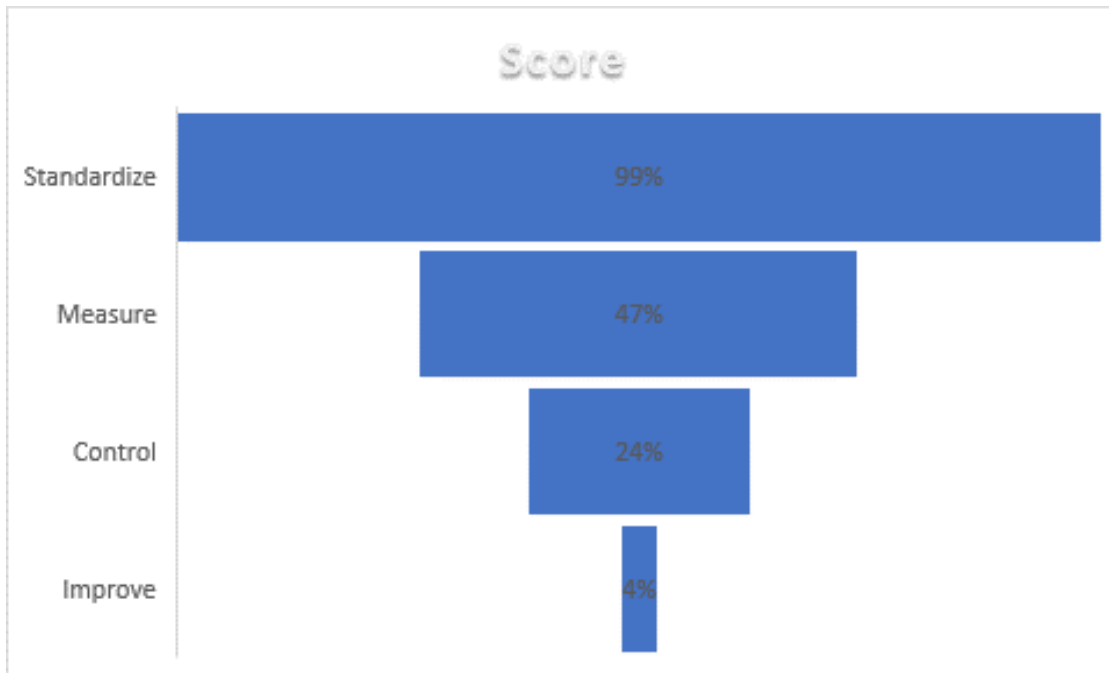
Risk Management	85	1120	Does your organization standardize the plan risk management process?			Processes of conducting risk mgt. planning, identification and response planning and monitoring risk on a	Standardize
	86	1810	Does your organization measure the plan risk management			Process of defining how to conduct risk mgt	Measure
	87	2350	Does your organization control the plan risk management				Control
	88	2740	Does your organization improve the plan risk management				Improve
	89	1170	Does your organization standardize the identify risks process?			Process of identifying individual project risk as well as sources of overall risk and documenting.	Standardize
	90	1860	Does your organization measure the identify risks process?				Measure
	91	2400	Does your organization control the identify risks process?				Control
	92	2790	Does your organization improve the identify risks process?				Improve
	93	1200	Does your organization standardize the plan risk responses process?			Process of developing options, selecting strategies and agreeing on actions to address overall risk exposure.	Standardize
	94	1890	Does your organization measure the plan risk responses process?				Measure
	95	2430	Does your organization control the plan risk responses process?				Control
	96	2820	Does your organization improve the plan risk responses process?				Improve

Procurement Management	97	1210	Does your organization standardize the plan procurement management process?			Plan procurement refers to processes necessary to acquire products and services needed from outside the project team.	Standardize
	98	1900	Does your organization measure the plan procurement management process?			Process of documenting procurement decisions, specifying approach and identifying potential	Measure
	99	2440	Does your organization control the plan procurement management process?				Control
	100	2830	Does your organization improve the plan procurement management process?				Improve
	101	1270	Does your organization standardize the conduct procurement process?			Processes of obtaining seller responses, selecting seller and	Standardize
	102	1960	Does your organization measure the conduct procurement				Measure
	103	2500	Does your organization control the conduct procurement				Control
	104	2890	Does your organization improve the conduct procurement				Improve
Stakeholder Management	105	1195	Does your organization standardize the identify stakeholders process?			Stakeholder Mgt includes processes required to identify the people, groups or organizations that could impact or be impacted	Standardize
	106	2005	Does your organization measure the identify stakeholders process?			Process of identifying stakeholders regularly and documenting relevant info r regarding their interest, involvement	Measure
	107	2015	Does your organization control the identify stakeholders				Control
	108	2025	Does your organization improve the identify stakeholders				Improve
	109	7530	Does your organization standardize the plan stakeholder management process?			Process of developing approaches to involve stakeholders based on their needs, expectations and interests and potential impact on	Standardize
	110	7580	Does your organization measure the plan stakeholder management process?				Measure
	111	7630	Does your organization control the plan stakeholder management process?				Control
	112	7680	Does your organization improve the plan stakeholder management process?				Improve

Appendix 5: Project Management Maturity Index of the Forest Department

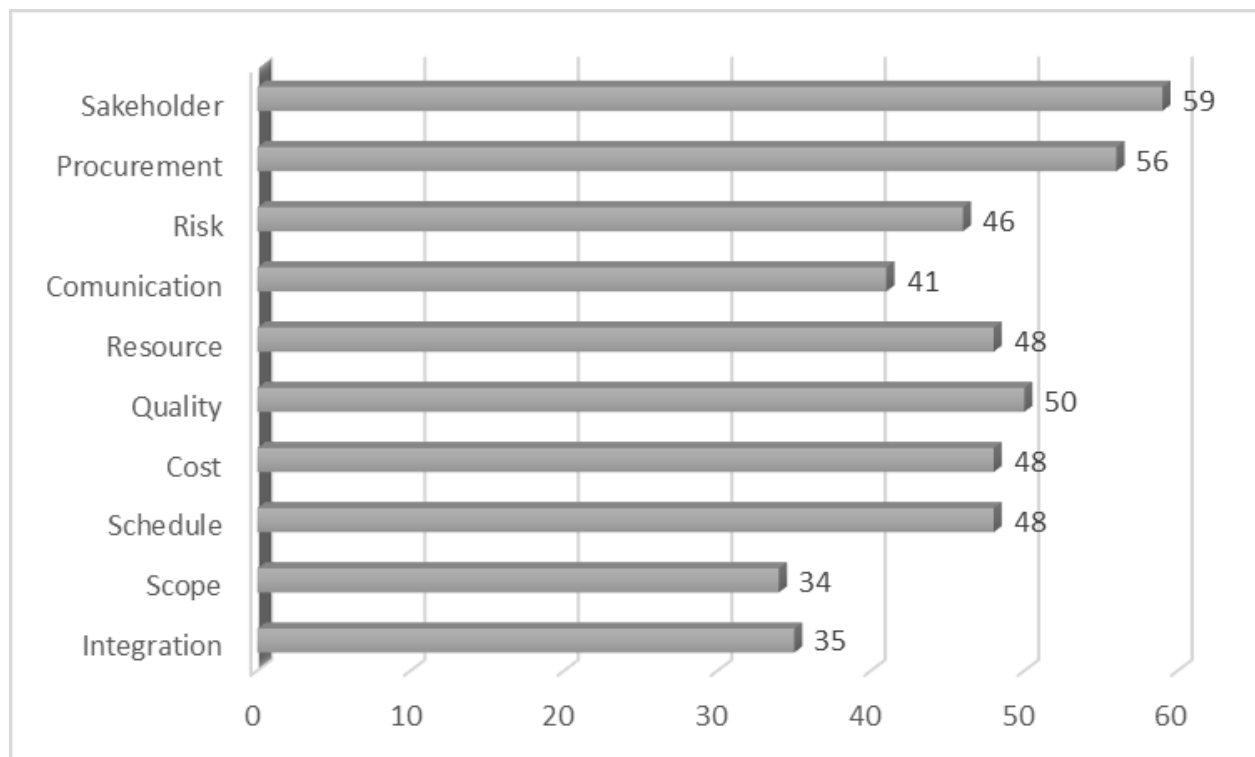
Process Improvement	Knowledge Area										Total	Overall Score
	Int.	Scope	Sch.	Cost	Qual.	Res.	Coms.	Risk	Pro	Stk.		
Standardize	12	15	16	12	8	12	8	12	8	8	111	99%
Measure	3	6	6	6	5	8	2	6	5	6	53	47%
Control	1	1	1	3	3	3	2	4	4	5	27	24%
Improve	1	0	0	2	0	0	1	0	1	0	5	4%
Total	17	22	23	23	16	23	13	22	18	19		
Coefficient	48	64	48	48	32	48	32	48	32	32		
Score	35%	34%	48%	48%	50%	48%	41%	46%	56%	59%		





Appendix 6: Maturity Assessment by Knowledge Area of the Forest Department

Knowledge Area	Process Improvement Processes								
	Standardize	Percentage	Measure	Percentage	Control	Percentage	Improve	Percentage	Total
Integration	12	25.0%	3	6.3%	1	2.1%	1	2.1%	48
Scope	15	23.4%	6	9.4%	1	1.6%	0	0.0%	64
Schedule	16	33.3%	6	12.5%	1	2.1%	0	0.0%	48
Cost	12	25.0%	6	12.5%	3	6.3%	2	4.2%	48
Quality	8	25.0%	5	15.6%	3	9.4%	0	0.0%	32
Resource	12	25.0%	8	16.7%	3	6.3%	0	0.0%	48
Communication	8	25.0%	2	6.3%	2	6.3%	1	3.1%	32
Risk	12	25.0%	6	12.5%	4	8.3%	0	0.0%	48
Procurement	8	25.0%	5	15.6%	4	12.5%	1	3.1%	32
Stakeholder	8	25.0%	6	18.8%	5	15.6%	0	0.0%	32



Integration Management



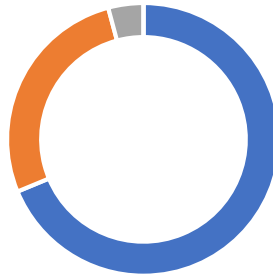
■ Standardize ■ Measure ■ Control ■ Improve

Scope Management

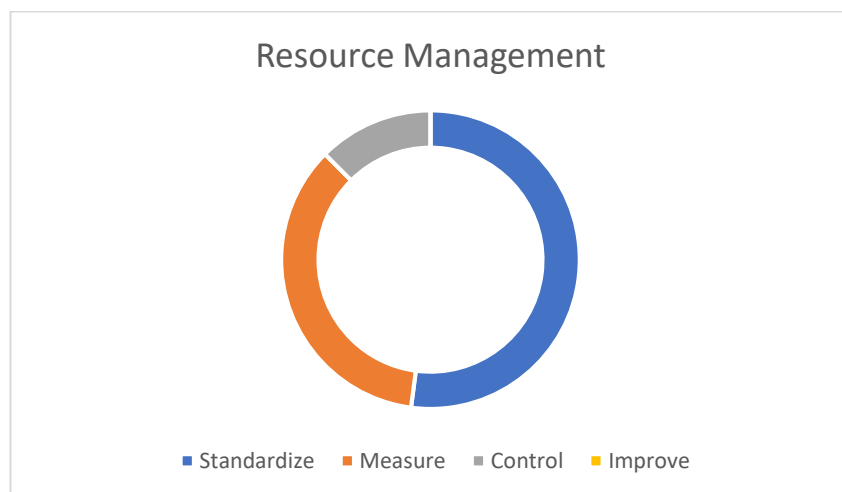
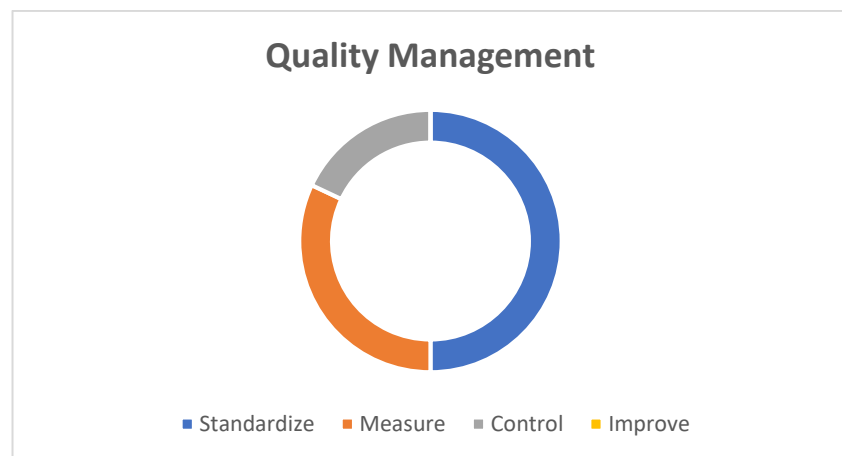
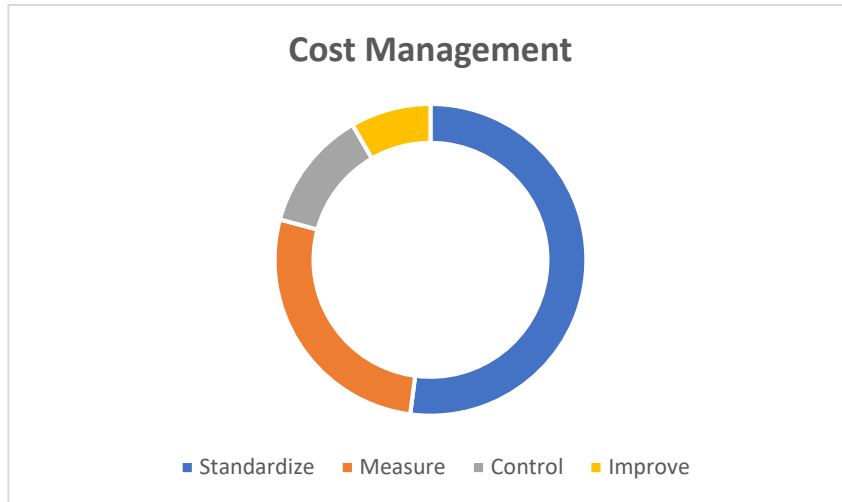


■ Standardize ■ Measure ■ Control ■ Improve

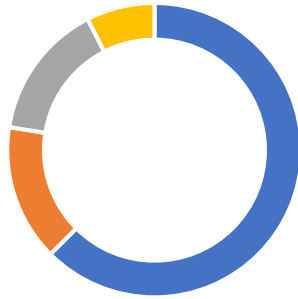
Schedule Management



■ Standardize ■ Measure ■ Control ■ Improve

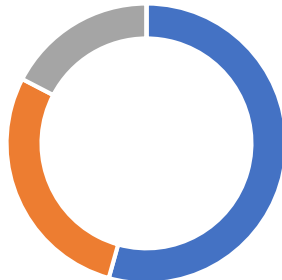


Communication Management



■ Standardize ■ Measure ■ Control ■ Improve

Risk Management

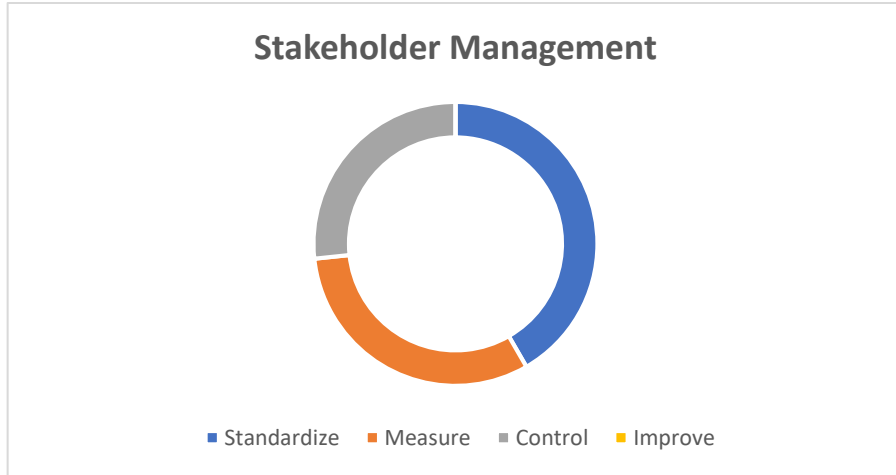


■ Standardize ■ Measure ■ Control ■ Improve

Procurement Management



■ Standardize ■ Measure ■ Control ■ Improve



Appendix 7: Philologist Revision Certificate

Revision Certificate

This is to certify that Ms. Judene Tingling has submitted the final graduation project entitled, "Proposal for the establishment of a Project Management Office for the Belize Forest Department (FD)", for revision.

I Ms. Emelie Stephanie Augustine, former secondary and tertiary level English Language instructor and holder of a Bachelor of Arts (in English) Degree, confirm that this document has been extensively revised and that all necessary corrections have been made.

During the revision process, errors in the following areas were rectified: misused apostrophes, missing commas, misuse of commas, missing semi-colons, incorrect subject-verb agreement instances, incorrect word choice, and incorrections in parallelism. All errors stated have been corrected and Ms. Tingling has received a copy of the document with all highlighted edits.

The document is extensively informative and high in relevance.
I give Ms. Tingling my full approval, this paper is ready for submission.



Ms. Emelie Augustine
B.A. (English)

