UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL

(UCI)

PROJECT MANAGEMENT PLAN FOR THE CONSTRUCTION OF AN EMERGENCY SHELTER BUILDING TO BE BUILT IN THE COMMUNE OF BEAUMONT IN HAITI

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FINAL GRADUATION PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

MASTER IN PROJECT MANAGEMENT (MPM) DEGREE

Port-au-Prince, Haiti

November 2021

UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL

(UCI)

This Final Graduation Project was approved by the University as

partial fulfillment of the requirements to opt for the

Master in Project Management (MPM) Degree

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DEDICATION

I dedicate this project to my wife, Nathalie Gaetan, and to my two daughters Lori-Ann Jessica Tham, Naelle-Ann Rebecca Tham for supporting me throughout this master degree journey and continuously pushing me ahead in life and professionally.

ACKNOWLEDGMENTS

I extend my thanks to Karen Foreman my supervisor who has always supported me and for giving me the opportunity to be in this program. My sincere affection and admiration also go to my study mates for their supports, words of encouragement and for being there for me especially during chaotic times in Haiti. My gratitude is also due to the professors, especially my tutor Osvaldo Martínez Gómez for supporting and guiding me during my final project.

ABSTRACT

The objective of this document is to elaborate a Project Management Plan for the construction of an emergency Shelter in the commune of Beaumont located in the southwest of Haiti to accommodate families in case of emergency. Annually Haiti faces population displacements due to natural disasters such as hurricanes, earthquakes etc. The Civil Protection of Haiti Unit often uses schools, churches and health centers which are not appropriately accommodated, to receive people. This also prevents those institutions from resuming their services after a disaster.

The final product of the FGP consists in developing the Project Management Plan for the construction of an emergency Shelter. The final deliverables of the project that correspond to the Management Plan: Management plans for scope, schedule, costs, quality, resources, communications, risks, procurement, and stakeholders. For this, a (Qualitative) Actions' Analysis Methodology and the theoretical framework provided by the Project Management Institute through the PMBOK will be used.

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ABBREVIATIONS AND ACRONYMS

ASEC: The assembly of the communal section

BOQs: Bill of Quantity

BVA: Budget Variance Analysis

CASEC: Municipal Board of Directors

CCCM: Camp coordination and camp management

CNGRD: National Disaster Risk Management Committee

DGPC : Direction Générale de la Protection Civile / Civil Protection Head Quarters

DRR: Disaster Risks Reduction

FGP: Final Graduation Project

GDN: Goods Delivery Notes

GRN: Goods Receive Notes

HFHH: Habitat for Humanity HAITI

IDPs: Internally Displaced Persons (IDPs)

IOM: International Organization for Migration (IOM),

MICT: Ministry of the Interior and Local Authorities

PM: Project Manager

PMBOK: Project Management Body of Knowledge

PMI: Project Management Institute

PMP: Project Management Plan

RACI: Responsible Accountable Consulted Informed

RFT: Request for tenders

TORs: Terms of references

UNFCCC: The United Nations Framework Convention on Climate Change

UNCED: The United Nations Conference on Environment and Development

UNHCR: Office of the United Nations High Commissioner for Refugees

WBS : Work-breakdown structure

EXECUTIVE SUMMARY

Haiti ranks as one of the countries with the highest exposure to multiple hazards, which annually causes important population movement. The Civil Protection UNIT, officially called DGPC is responsible for ensuring the communities that are at risk to have temporary emergency shelters in order to receive families, in case of emergency.

The Haiti Government agencies has a long history of unfinished infrastructures or constructions projects. The phenomenon of project non-completion in Haiti is mostly linked to: Lack of project management capacity including lack of monitoring and control, clientelism, misuse of funds/theft.

As a Final Graduation Project, Habitat for humanity proposed, jointly with the DGPC, the elaboration of a Project Management Plan for the construction of a temporary shelter in the commune of Beaumont. The introduction of Project Management principles promoted by PMI will allow DGPC to better use the resources, reduce cost, and increase economy efficiency.

The General objective of the FGP is to develop a Project Management Plan for the effective and efficient management of the construction of an emergency shelter in the commune of Beaumont in Haiti. And the Specific objectives of the FGP were: To create the project charter that will be used as input in the elaboration of the different objectives/management plans; to design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project; to Create a schedule management plan, which will take into consideration approaches, methods, processes, and procedures that will guide the determination and management of the time allocated to project activities; to develop a cost management plan that will serve as a guide for effective management of project costs; to build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures, and guarantee the satisfaction of the expectations of the project stakeholders; to develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project; to create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes, to elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project; to develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will be also prioritized. To produce a stakeholder management plan that will establish the methods and approaches facilitating the engagement of actors who can influence whether upstream or downstream, the outcomes of the project.

The theoretical framework of the FGP is based on the 10 Project Management Knowledge Areas. While the Action-analytical strategy is the main research method the FGP will be based on, which consists of studying and improving the current practices. A combination of tools was selected to develop the Project management plan, sub-plans, and related project documents. Both, Knowledge areas and the Action-analytical framework were combined to facilitate the diagnosis of the current situation, identify gaps and bad practices, and propose corrective measure through the Project management plan.

In conclusion, the overall goal of the FGP is to develop a Project Management Plan for the effective and efficient management of the construction of an emergency shelter in the commune of Beaumont in Haiti. The project management plan defines how the project will be executed, monitored, and controlled and closed. It includes a scope management plan, a schedule management plan, cost management plan, a quality management plan, a resource management plan, a communication management plan, risk management plan, a procurement management plan and a stakeholder management plan. The project management proposed a series of processes, procedures, tools, and techniques to guide the project team during the implementation of the project. Given that, the project management plan is a dynamic document that will need to be updated and revised throughout the project lifecycle, a clear process for implementing changes, named Integrated Change Control Process, was established.

To ensure the successful execution of the project and to ensure the transfer of knowledge and the strengthening of the capacity of the DGPC in of project management, I recommend the establishment of a steering committee involving the DPGC, HFHH and PM. The project should also consider an experience capitalization component to enable the DGPC to identify, analyze and document the best project management practices.

1. INTRODUCTION

1.1. Background

The Civil Protection UNIT is a central headquarter of the Ministry of the Interior and Local Authorities (MICT). It mainly deals with risk and disaster management (DRR) throughout Haiti. Founded in 1997, the Civil Protection Unit is responsible for coordinating all emergency response operations and all risk management actions, particularly in the face of emergencies and disasters.

Following Hurricane Georges, which hit the island of Haiti in September 1998, the issue of prevention and risk reduction rose to the top of the government's agenda. Thus, the Civil Protection Unit has been given the task to ensure ~~that~~ all the communities at risk with temporary emergency shelters. They are buildings used to evacuate people from a high-risk area where their lives are in danger in the face of a threat linked to natural disasters. The temporary shelter aims at receiving families for a few hours to one (1) day, up to seventy-two (72) hours maximum. To date the Civil Protection Unit has in its database 1477 collective shelters, of which more than 63% are schools and 26% churches, which are not actually built to accommodate people. The municipality of Beaumont, targeted by the construction project of the temporary shelter, has a population of 31,580 inhabitants and has about 8 temporary shelters including 5 schools and 2 health centers.

As Final Graduation Project, Habitat for humanity, an organization involved in the promotion of decent housing for low-income families, proposes to elaborate in collaboration with the Civil Protection Unit the Project Management Plan for the construction of a temporary shelter in the community of Beaumont.

The planning of this project will consider the ten knowledge areas including the inputs, tools and techniques, and the accompanying outputs.

1.2. Statement of the problem

Haiti ranks as one of the countries with the highest exposure to multiple hazards. The country lies in the middle of the Caribbean Basin and has the highest vulnerability rating in terms of cyclones among the region's small island states. The recurrence of natural disasters often triggers internal displacement of populations to collective centers/emergency shelters located mainly in schools and churches that are neither safe nor designed for accommodation.

Since 1998, the Haitian government has prioritized preparedness to reduce the risk on people's lives and assigned the responsibility to the Civil protection unit to provide communities at risk with emergency shelter/temporary shelters.

Due to a lack of planning, resources, leadership etc.; the Civil Protection Unit, in charge of ensuring that the communities are prepared for potential disasters, has identified pre-existing buildings across the commune of Beaumont (schools, churches, etc.) to be used as evacuation centers for local populations in case of emergency. However, the living conditions in these buildings fail to meet minimum standards and do not ensure a life of dignity to be considered as emergency shelters.

Moreover, Haiti has a long history of unfinished infrastructures or constructions projects, be it roads, schools, bridges, hospitals, public markets to name a few. The public perception regarding the performance of the Haitian government, whether local or central, is very negative when it comes to undertaking infrastructure projects.

According to reports from Haiti's parliament, civil society/human rights organizations and investigations led by the government, the phenomenon of project non-completion, in Haiti, is linked to four main factors:

1) Non-completion related to corruption**,** either for private gain or to finance political activities. In this view, projects go unfinished due to theft or misappropriation of funds allocated to projects' implementation. From 2016 to

2019, Haiti has witnessed a very public corruption scandal. The parliament has investigated and reported many projects for which funding has been disbursed while they were not even initiated.

2) Nepotism: Transparency in the process of selecting the companies to be awarded contracts has always been a controversial subject in the Haitian public administration. Many were awarded by mutual agreement whereas an open call for tenders was to be the procedure to be followed. As a result, companies often suffered from a deficit of technical expertise and financial capacities necessary to do the work they have been contracted for.

3) Lack of monitoring and control, at this level the companies in charge of project implementation and government counterparts do not regularly monitor the implementation of the project, the activities, the cost, and the project implementation schedule. Thus, projects often end up running out of money while activities are unfinished or fall totally behind schedule to a point where donors often suspend them.

4) Non-completion could arise in theories of clientelism in which it may be sometimes rational for politicians to deliberately leave projects unfinished to increase voters' incentives to reelect them.

The above practices, which tend to become the norm in the Haitian context, make the execution of a project without the technical support of an external partner very difficult. In a context where financial resources are increasingly scarce and climate change is increasingly threatening and dangerous, it is imperative for the Haitian authorities to start promoting good practices and basic principles of project management, as the PMI was able to demonstrate their benefits. The proposed project management plan for the construction of the temporary shelter in the municipality of Beaumont will be a practical case through which the Civil Protection Unit will be able to acquire the necessary skills and ensure that the project will be completed on time and on budget.

1.3. Purpose

As mentioned above, the Final Graduation Project will be based on a proposal from Habitat For Humanity to partner with the Civil Protection Unit to develop the Project Management Plan for the construction of an emergency shelter in the commune of Beaumont. The project will consider applying proper Project Management principles promoted by the PMI through the PMBOK.

The introduction of the Project Management Plan into the operational practices of the Civil Protection Unit will allow the latter and the municipality's authorities of Beaumont to strengthen their capacity in project management. The application of the project management principles and best practices will specifically give access to the following benefits:

a. Community involvement: Through the stakeholders and communication management plans, the Civil Protection Unit and municipal authorities will have the opportunity to involve members of the community who could share their requirements, offer their contribution in terms of time, skills, materials, and other resources to facilitate the completion of the construction of the temporary shelters. In addition, the communication and stakeholders' management plans will help to mitigate bad perceptions and rumors about false allegations of corruption, bad practices, etc., which will help strengthen the image, confidence, and legitimacy of local authorities within their communities. It will also facilitate interaction and harmony between the authorities and their fellow citizens.

b. Cost management: The cost management plan will allow the sound planning and management of the financial resources allocated to the project. It will facilitate intelligent decisions making that can allow the project to optimize the use of resources and to finally complete the project on time and within budget.

c. Schedule management: The schedule management plan will allow the actors involved to determine the time needed to complete the activities and the project. It will equip them with appropriate tools to monitor the implementation schedule and enable them to complete the project over time.

d. The procurement and resource management: Both procurement and resources management plans will facilitate the identification, acquisition, and availability of appropriate and quality materials when and where they are needed. Thus, the construction of the temporary shelter will be completed on schedule.

e. Risk management: Whatever the nature of a project or its implementation environment, projects are naturally dependent on risks (internal or external) which can affect the implementation and the results of the project. By considering the different knowledge areas and the plans that go with them, a set of preventive measures will already be available and will reduce the risks that may impact time/schedule, quality and cost. The risk management plan will specifically allow the project to take into consideration early on, the risks that may influence the budget, schedule, quality, or results of the project.

1.4. General objective

To develop a Project Management Plan for the effective and efficient management of the construction of an emergency shelter in the commune of Beaumont in Haiti.

1.5. Specific objectives

Specific objectives:

1. To create the project charter that will be used as input in the elaboration of the different objectives/managment plans.

2. To design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project and manage them to ensure that they're completed within the boundaries agreed upon with the stakeholders

3. To Create a schedule management plan, which will take into consideration approaches, methods, processes and procedures that will guide the determination and management of the time allocated to project activities and ensure its completion within ~~and~~ budget.

4. To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.

5. To build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures, and guarantee the satisfaction of the expectations of the project stakeholders.

6. To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project

7. To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes.

8. To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the outcomes of the project.

9. To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right

materials are available to the project when and where needed. Green procurement will be also prioritized.

10. To produce a stakeholder management plan that will establishes the methods and approaches facilitating the engagement of actors who can influence, whether upstream or downstream, the outcomes of the project.

2. THEORETICAL FRAMEWORK

2.1. Company/Enterprise framework

On June 1, 2020, the government adopted the decree # 2020/000 relating to the creation, organization and functioning of the Head Quarters of Civil Protection, hereinafter referred to as "DGPC". It determines the different structures of the DGPC and sets their attributions. According to the decree # 2020/000, the Head Quarters of Civil Protection (DGPC) has become an autonomous body with administrative character. It is placed under the supervision of the Ministry of the Interior and Territorial Communities.

2.1.1. Company/Enterprise background

This decree facilitated the State to allocate to the DGPC, an annual budget to finance operating, maintenance of equipment and investments. The financial resources of the DGPC come from: a) State endowment - b) Designated grants provided by any other public or private body - c) Gifts in cash or in kind. The funds to finance Risk and Disaster Management activities are deposited at the central bank, on behalf of the DGPC. The funds are disbursed according to the principles of public accounting in force.

2.1.2. Mission and vision statements

The Head Quarters of Civil Protection (DGPC) has the specific mission of ensuring the implementation of the civil protection sector policy. It performs the functions of coordination, knowledge management, technical support, capacity building and mobilization of the National Risk and Disaster Management System (SNGRD).

The main functions of the Head Quarters of Civil Protection are:

1) Coordinate, with the scientific and technical bodies concerned, research to be carried out to prevent, mitigate disaster situations, prepare to respond to and develop sustainable and resilient post-disaster recovery.

2) Propose to the National Disaster Risk Management Committee (CNGRD), the establishment of a normative framework or specific measures to act on situations of particular vulnerabilities, based on the results of this research.

3) Ensure the Secretarial Office of the CNGRD.

4) Structure the SNGRD, ensure its harmonious and dynamic functioning and guarantee its sustainability.

5) Provide technical assistance to Sectoral and Institutional Committees in matters of Disaster Risk Management (DRM) and supervise the implementation of their plans;

6) Coordinate, organize and control response actions in areas affected by a disaster;

7) Ensure the permanent functioning of the Emergency Operations Centers (COU),

8) Support field operations in coordination with the departmental committees, communal and local.

9) Evaluate the extent of loss and damage caused by a disaster as well as the priority needs and present the related reports to the National Committee, with the corresponding recommendations.

10) Coordinate and supervise, in the affected areas, through its departmental bodies, the execution of actions to be carried out by other institutions

The integration of good practices and principles of project management into the organizational culture of the DGPC, will enable the latter to fulfill its first function which is focused on the mitigation and preparation of the Haitian communities to natural disasters. Indeed, the project management processes and procedures will make it possible to monitor the implementation of the project management plan

and the sub-plans, and the optimization of resources, and the completion of the project aimed at setting up emergency shelters in the various communities at risk.

Thus, the DGPC will strengthen preventive measures to reduce the vulnerability of families and reduce victims and loss of human life in the event of natural disasters.

2.1.3. Organizational structure

The Head Quarters of Civil Protection includes:

1) Head Quarters and the following Administrative and Technical units:
    a) The Department of Administrative Affairs and Budget.
    b) The Department of Emergency Preparedness and Response.
    c) The Prevention Department: The Prevention Department's main responsibilities are to plan, coordinate and supervise all actions aimed at disaster risk reduction.
    d) The Direction of training .
    e) The Communication Department.
    f) The Planning, Monitoring and Partnership Department.
2) Territorial authorities:
    a) Departmental Technical Coordination
    b) Municipal Technical Coordination

2.1.4. Products offered

As a legally recognized state entity mandated by the State of Haiti, the DGPC is in direct charge of all activities relating to the management of risks and disasters in the country. Its fields of intervention cover from the establishment of a legal framework for the management of risks and disasters, through preparedness

actions including construction and management of emergency shelters, to the coordination of disaster response activities. Specifically, the DGPC provides the following services:

Legal framework: The DGPC carries out any study relating to the application of normative texts and collaborates in the preparation of draft laws and regulations concerning disaster risk management. It ~~it~~ gives its opinion on any question and dispute arising from the application of the texts in force. The DGPC provides guidance on requirements or specifications relative to accommodations' capacities and operational management of emergency shelters.

Strategic orientations: The DGPC defines the main orientations and develops strategies, policies, and programs in Disaster Risk Management and to develop partnerships with institutions non-state actors intervening in the domain of the Disasters Risk Reduction.

Communication: The DGPC assures the impetus of all activities relating to the development of information technologies and communication in connection with the Disasters Risks Reduction issue. The DGPC ensures the publication of the mapping of the emergency shelter. It also publishes a guideline for emergency shelter management, and the requirements that a building should have to meet the emergency shelter standards.

Preparedness: The DGPC has the essential functions of planning, coordinate, and supervise all actions aimed at disaster risk reduction. It ~~She~~ is also responsible for the development of strategies and the development of technical tools in the field of risk management. This includes accompany the local structures to put in place in their communities the emergency shelter that will be used to accommodate people in case of any emergency.

Capacity building: The DGPC provides all the necessary instruments to ~~for~~ facilitate the intervention of civil protection agents in the field and coordinate its action plan with all relevant public institutions. It defines and ensures the

implementation and monitoring of all actions aimed at training actors in the field of civil protection and participate in the improvement of quality of prevention activities, and civil protection interventions in order to improve the protection of the population.

2.2. Project Management concepts

2.2.1. Project

According to the PMBOK a project is defined as a “temporary endeavor undertaken to create a unique product, service or result” (PMBOK guide 6th edition, 2017, p, 10). The project must create something unique whether it is a product, service or result and must be progressively elaborated.

2.2.2. Project rationale

Projects are generally initiated in order to meet a set of needs that may be affected by various factors as follows:

- Meet regulatory, legal, social requirements
- Satisfy stakeholders request or needs
- Implement or change business, or technological strategy
- Create, improve, or fix product or services

A project may be managed in three separate scenarios: as a stand-alone project, within a program or within a portfolio

2.2.3. Project Constraints:

Project constraints are limiting factors that can impact quality, delivery, and overall project success. The six major constraints of every project, include Scope, Schedule, Cost, Quality, Resources, and Risks. The construction of the emergency shelters in the municipality of Beaumont will aim to receive or accommodate families living in risk areas in the event of disasters, ideally for a

period of 72 hours. The construction works will begin on July 1st, 2022, and end on December 31st, 2022. In other words, the project will be implemented over a period of six (6) months. A fix budget of 300,000 US dollars will be available to undertake the construction works. Based on the information above, the construction of the emergency shelter meets the criteria to be considered a project. Indeed, the initiative will be set up to meet the protection needs of families at risk in the municipality of Beaumont and will be subject to the constraints of schedules / time, costs, resources, risks, and quality like any other project. It is temporary in nature and has a predetermined beginning and ending date. Once the construction is completed and officially transmitted to the community by the DGPC the project will end, as the objectives are achieved.

2.2.4. Project management

PMI through the PMBOK® Guide has defined Project Management as the “application of knowledge, skills, tools, and techniques to project activities to meet the project requirements”. Project management is accomplished through application and integration of the project management processes (PMBOK guide 6th edition, 2017, p, 10).

Project management offers a wide range of benefits including meeting business needs, optimizing the use of organizational resources, managing change in a better manner, managing constraints (e.g., scope, schedule, quality, costs, and resources), responding to risk in a timely manner, satisfying stakeholders expectations, etc...

2.2.5. Project life cycle

The Project Life Cycle refers to the steps that should be followed when moving through stages of project completion. The Project Life Cycle provides the framework for managing any type of project or phases of a project starting from the genesis of the project idea, going through the planning, the execution until the closing of the project.

According to the PMBOK, the life cycle of a project is composed of five main steps which are made up of a set of processes, principles and practices serving as a frame of reference by which practitioners, project managers, organizations, companies, etc. employees etc. refer to formalize their project ideas and achieve the expected objectives. The five steps of the project life cycle are as follow: initiating, planning, executing, monitoring, controlling, and closing.

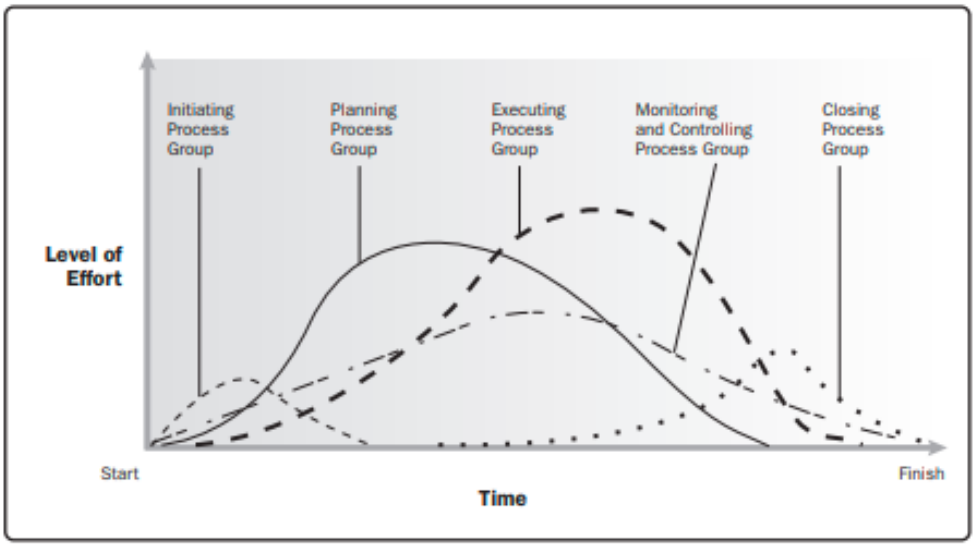


Figure 1. Example of Process Group Interactions within a Project or Phase (PMBOK Guide, 6th edition)

2.2.6. Project management processes

Initiating, planning, executing, monitoring, controlling, and closing are, according to the PMBOK, the process groups. They are made up of a set of processes intended to facilitate the organization of the work of the stakeholders in a project, especially the project manager. The process groups are interconnected and complementary and follow a logical sequence in the implementation of the various stages and activities of the project. They allow project managers to make logical and rational decisions regarding the allocation and use of resources in order to achieve the objectives set by the project in the time and budget planned. The interrelation of group processes is mainly ensured through the link between inputs and outputs. The project charter for example which is an output of the development process of

the project charter under the initiating process group is the key input for the Plan Project Management Process which will be undertaken under the planning process group.

Initiating: According to PMBOK, the initiating process group is a set of processes that are usually performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase. At this stage the initial scope is defined, and initial financial resources are committed. For the purpose of the FGP, it was assumed that the two entities Habitat for Humanity, the entity that is proposing the project to the DGPC, have given their agreement with respect to the scope of the project and the authorization to engage the resources for the design of the project, hence the origin of the project charter in the annex 1.

Planning: The planning process group, the largest of the five process groups, has 24 processes. This group of processes aims at facilitating the planning of the entire project in detail, from the scope, schedule, and budget, through management of the key stakeholders. The primary outcome of this planning stage is a Project Management Plan (PMP). The PMP usually has a set of sub-plans to further outline some of the critical areas, such as the project schedule, cost, risk, communication, procurement, resources, stakeholders' management. The PMP is a "living document" that is updated and revised throughout the project as changes occur. Considering the timing and other resource considerations, the FGD will be limited to the planning phase. In other words, the bulk of the work will be concentrated at the planning process group level. The project will consist of the development of the project management plan for the construction of an emergency shelter in the municipality of Beaumont. The work will extend over the sub-plans relating to the different knowledge areas.

Executing: The executing process group is where most of the action happens on a project. It is also where most of the budget is spent and where the actual project deliverables are produced. The implementation of activities related to scope, schedule, quality, stakeholders, cost, resources, procurement, communication, and risk management plans are materialized at this level.

Controlling and monitoring: The second largest process group is the controlling and monitoring; it is comprised of twelve (12) project processes. These processes are conducted throughout the entire project and are in place to ensure there is sufficient oversight. This will also help identify and mitigate any potential risk that may emerge throughout the implementation process of the project.

Closing: The closing consists of closing the project or a phase of the project. It has only one primary process. Customer acceptance of all final phases or project deliverables is the main activity of this process group. Documentation should also be completed and stored, and any loose ends of the project or phase should be tied up.

2.2.7. Project management knowledge areas

The formalization and execution of activities relating to the different phases of the life cycle of a project are materialized through the 10 interrelated knowledge areas. The PMBOK define the knowledge areas as being an identified area of project management defined by its knowledge requirements and described in terms of its processes, practices, inputs, outputs, tools, and techniques. The knowledge areas are as follows:

1) Project integration management
2) Project scope management
3) Project schedule management
4) Project cost management
5) Project quality management
6) Project resource management
7) Project communications management
8) Project risk management

9) Project procurement management

10) Project stakeholders' management

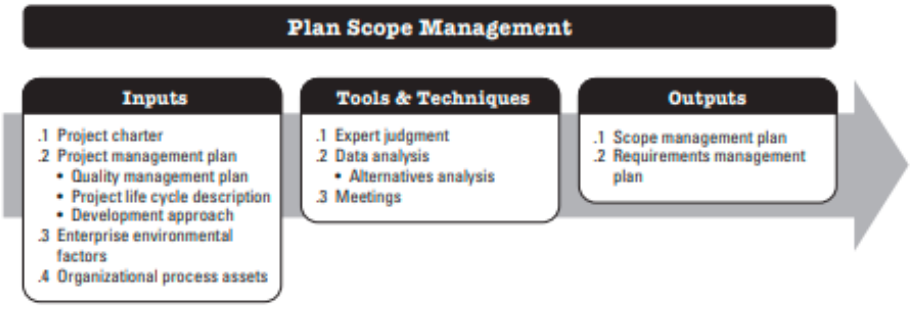
a. Project scope management

According to the PMBOK, Project Scope Management includes the process of identifying and defining what actions are required to deliver a project's requirements, and only the work required, to complete the project successfully. The Project scope management knowledge has 6 processes, 4 of which are at the planning process group level and 2 are in the control and monitoring process group.

1) Plan Scope Management:

This is the process of creating a scope management plan that documents how the project and product scope will be defined, validated, and controlled (PMBOK guide 6th edition, page 134). In other words, this process specifies the approaches that the project team will use to define what is part of the project and what is not. As part the FGP, the Scope Management Plan, will allow the PM to know the requirements to prioritize and allocate resources. The figure below will provide details on the inputs, tools and techniques, and output of the Plan Scope management.

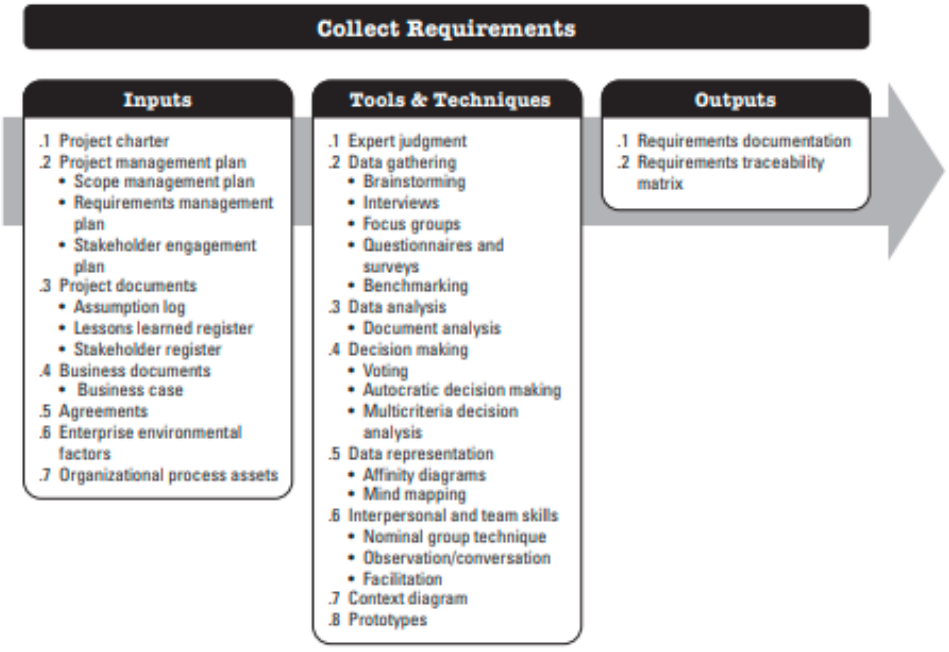
Figure 2. Plan Scope Management inputs, tools and techniques, and output (PMBOK Guide 6th edition)



2) Collect Requirements

According to PMBOK, the Collect requirement process defines, documents, manages stakeholder's needs and requirements to meet objectives. It facilitates the definition of the product scope and the project scope. Details regarding the inputs, tools and techniques, and outputs are provided in the figure below.

Figure 3. Collect Requirements inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

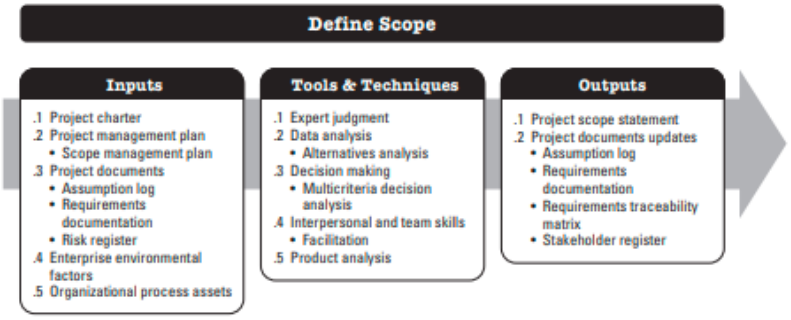


The construction project on which the FGP is based will affect or may be affected by many stakeholders including the population of the municipality of Beaumont, local authorities, DGPC, Habitat for humanity, supplier of construction materials, technicians, and the project team etc. Each of these groups have requirements for the project. Through the process of gathering requirements, the PM will have the opportunity to identify the needs and requirements of stakeholders in the planning of the project. On the other hand, this exercise will allow team members to define the boundaries and limits of the project.

3) Define Scope:

It is the process of developing a detailed description of the project and product. Details on inputs, tools and techniques, and outputs are provided in the figure below

Figure 4. Define scope inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

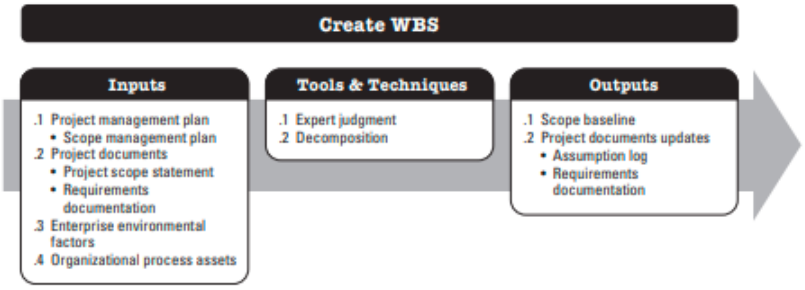


Based on the requirement collected from the stakeholders that will be involved in the construction of the emergency shelter, the PM will be able to detail the description of the project scope, and the product scope. As mentioned above it will help to define the boundaries of the project and clarify what should be considered to be part of the project. This is an extremely important process for the project success, as it allows every stakeholder to know the exact outcome they should expect from the project. For the project team, particularly it will help to avoid any situation of rework and waste of resources such as time, money, etc.

4) Create WBS

Subdividing project deliverables and project works into smaller work and more manageable package. Details on inputs, tools and techniques, and outputs are provided in the figure below:

Figure 5. create WBS inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



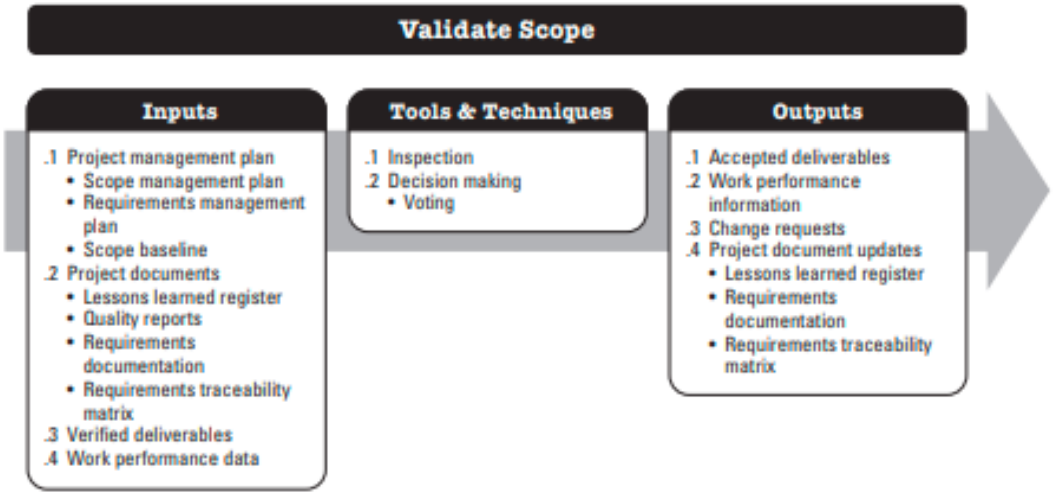
This process is one of the most important, not to say the most important of the processes, because it consists in breaking down the project into different components in order to be able to identify the different steps to be followed to achieve the expected results. It also considers the disaggregation of the works and tasks to be accomplished to complete the project.

As part of the FGP, the MP will have to create a WBS which will consider the different aspects of the project including design, research, compliance, procurement, construction, supervision, control, etc. in order to have a comprehensive tool that can be used and facilitate the implementation of the project. The WBS will complete the scope baseline of the project. The PM will develop the WBS dictionary to enable stakeholders, especially the DCPC, to understand the terms used in the project.

5) Validate Scope

Formalizing the acceptance of the deliverables by stakeholders including the clients. Details on inputs, tools and techniques, and outputs of the scope validation process are provided in the figure below.

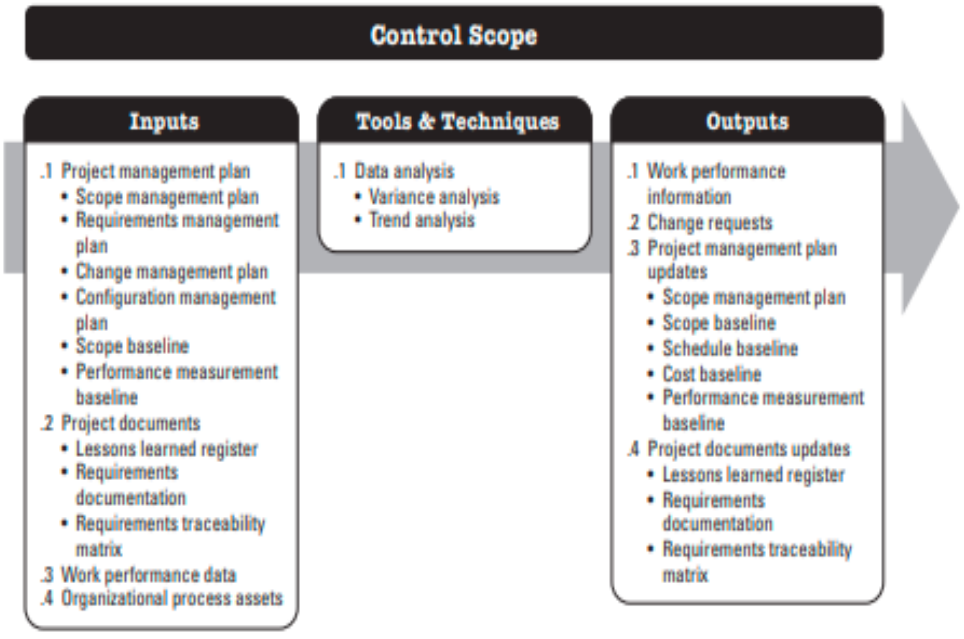
Figure 6. Validate scope inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



6) Control Scope

It's the process of monitoring the status of the project and product scope and managing changes to the scope baseline (PMBOK guide 6th edition, page 167). Details on inputs, tools and techniques, and outputs of the Control Scope process are provided in the figure below.

Figure 7. Control scope inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



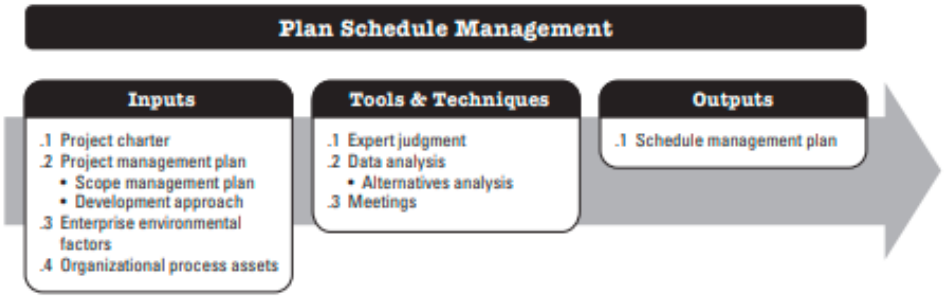
2.2.5.2. Project schedule management

As Per the PMBOK the Project schedule management includes the process required to manage the timely completion of the project (PMBOK Guide 6th edition, page 173) The Project schedule management contains six (6) processes five of them are conducted in the planning process group and one (1) is under the monitoring and control process group.

b. Plan Schedule Management

This process established the policies and procedure that the project team will use to plan, develop, manage, execute, and control the project schedule. Details on inputs, tools and techniques, and outputs of the process are provided in the figure below.

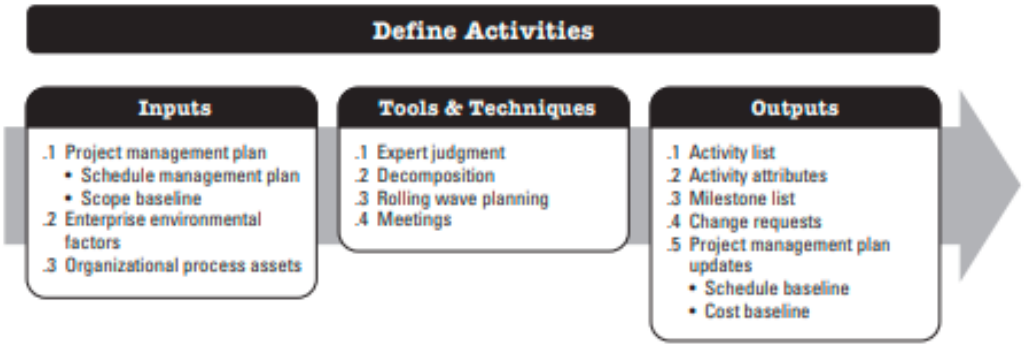
Figure 8. Plan Schedule Management inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



1. Define activities

This process helps identifying and documenting the specific actions to be performed to produce the project deliverables. Details on inputs, tools and techniques, and outputs of the process are provided in the figure below.

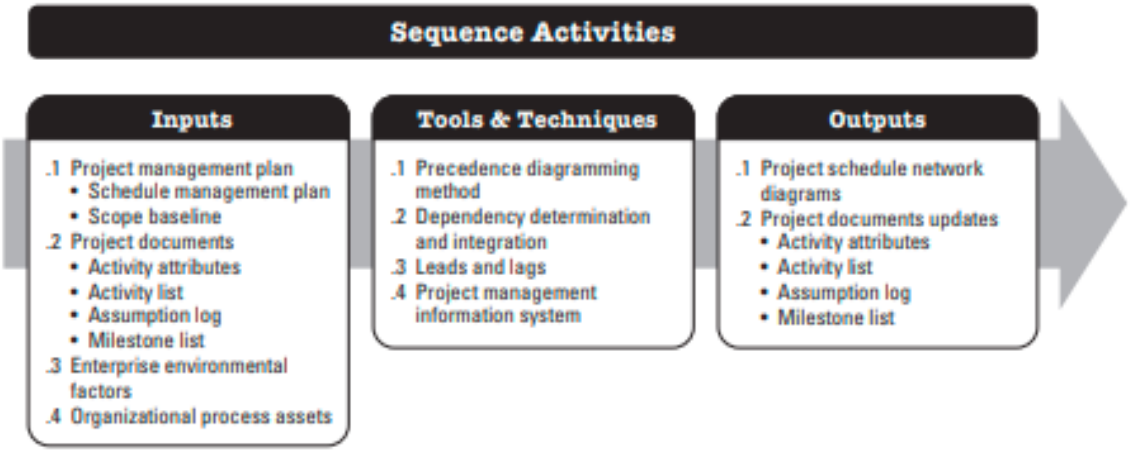
Figure 9. Define activities inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



2. Sequences activities:

This is the process of identifying and documenting relationships among the project activities. Details on inputs, tools and techniques, and outputs of the process are provided in the figure below.

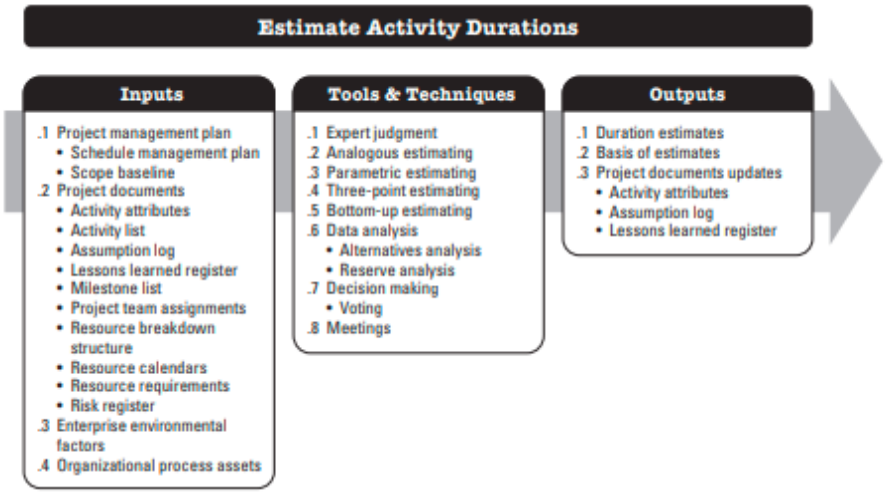
Figure 10. Sequence activities inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



3. Estimate Activity durations

This is the process to determine the amount of time it takes to complete an activity. Details on the inputs, tools and techniques, and outputs of the estimated activity durations process are provided in the figure below.

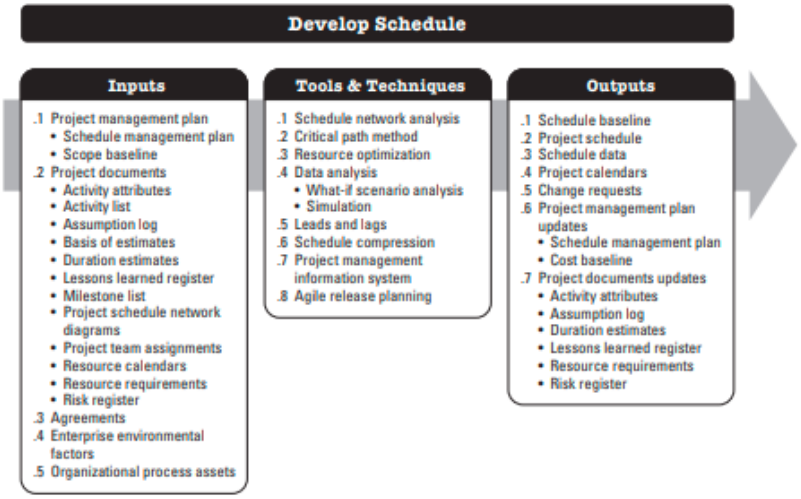
Figure 11. Estimate activity inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



4. Develop Schedule

This process consists of analyzing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule model for project execution and monitoring and controlling (PMBOK Guide 6th edition, page 173). Details on the inputs, tools and techniques, and outputs of the schedule development are provided in the figure below.

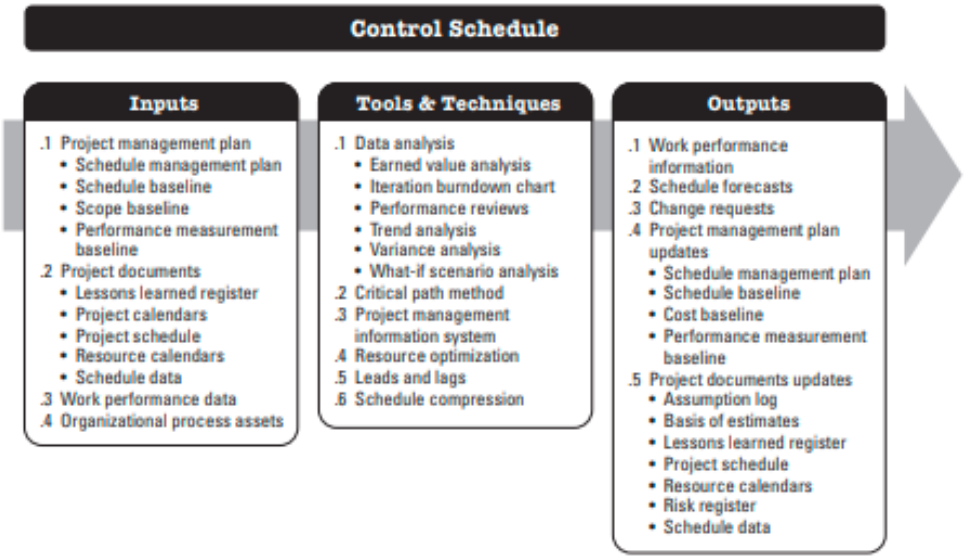
Figure 12. Develop Schedule inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



5. Control schedule

This process consists of monitoring the status of project activities to update project progress and manage changes to the schedule baseline to achieve the plan. Details on the inputs, tools and techniques, and outputs of the schedule development are provided in the figure below.

Figure 13. control Schedule inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



c. Project Cost management:

Project cost management this process includes the processes involved in planning, estimating, budgeting, financing, funding, managing and controlling cost so that the project can be completed within the approved budget. (PMBOK Guide 6th edition, page 231).

The project cost management knowledge area has four processes, three (3) of them are conducted under the Planning process group and one (1) under the monitoring and controlling process group.

Poor cost management is one of the factors behind the high failure rate of projects implemented by the Haitian government. From the outset, the costs do not always reflect the real costs of the market, and do not consider a set of economic factors that may influence them such as inflation, depreciation etc. Consequently, through the FGP, the PM intends to propose to the DGPC a whole package of planning,

execution, and budget control tools to ensure that the project is finalized within the planned budget.

1. Plan Cost Management

According to the PMBOK, this is the process that determine how the project cost will be estimated, budgeted, managed, monitored and controlled. It is performed once or at predefined points in the project. The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 14. plan cost management inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

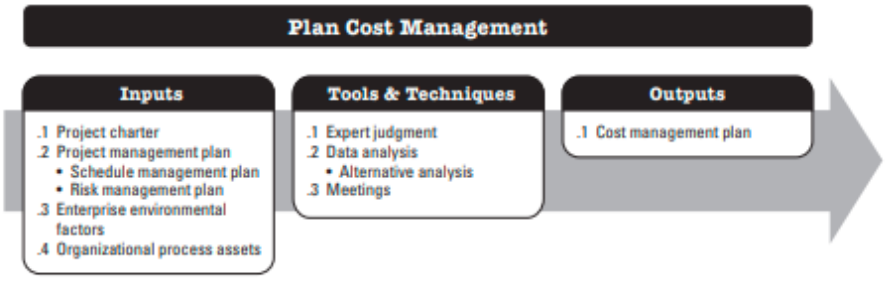


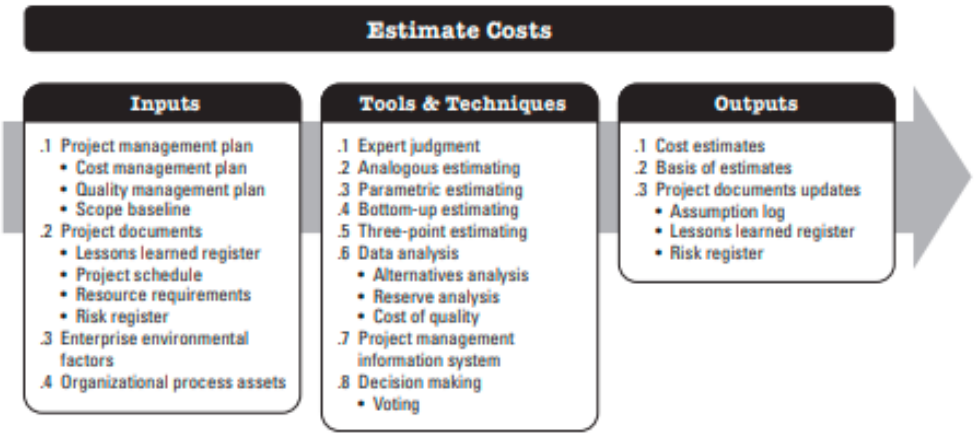
Figure 7-2. Plan Cost Management: Inputs, Tools & Techniques, and Outputs

In cost management plan, the PM of the FGP will propose the guidance that will equip the project team with effective tools that allow them to estimate the costs of activities relating to the construction of emergency shelters, to develop and control the budget. This will facilitate effective and efficient use of the resources allocated to the project, and keep any variance under control, and ultimately complete the project within budget.

2. Estimate Costs

The project team determines the approximate financial resources needed to complete project activities. The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 15. Estimate Cost inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

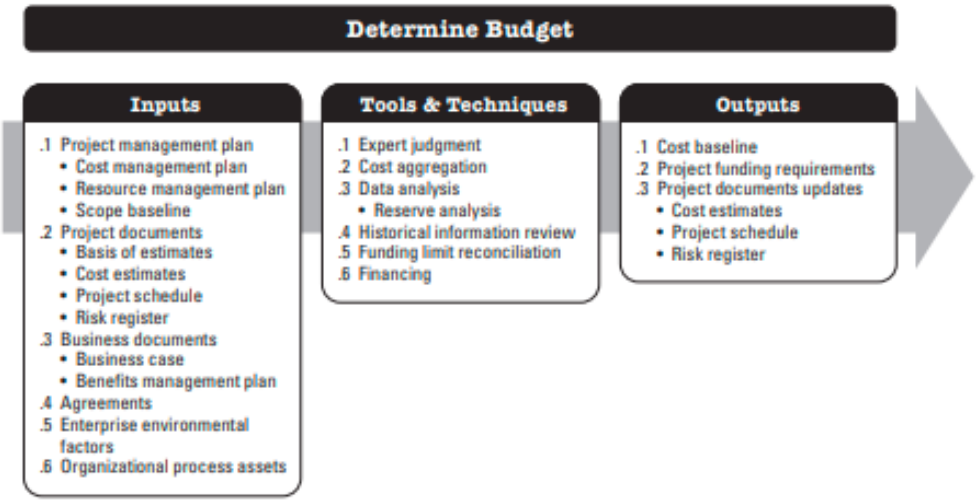


Poor estimation of the costs of activities is often the basis of budget concerns. In fact, the project team often does not take sufficient time to evaluate the cost, or they do not use the proper techniques, such as analogs, parametric, etc. to determine the estimates rationally and objectively. Through the FGP, the PM intends to use a combination of tools and techniques so that the estimated costs reflect as closely as possible the real cost of the project. This will also contribute to ~~the~~ strengthening the capacity of the state actors who will be involved in the project.

3. Determine Budget:

This is the process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline. (PMBOK Guide 6th edition, page 231). The details regarding the inputs, tools and techniques, and output are provided in the figure below.

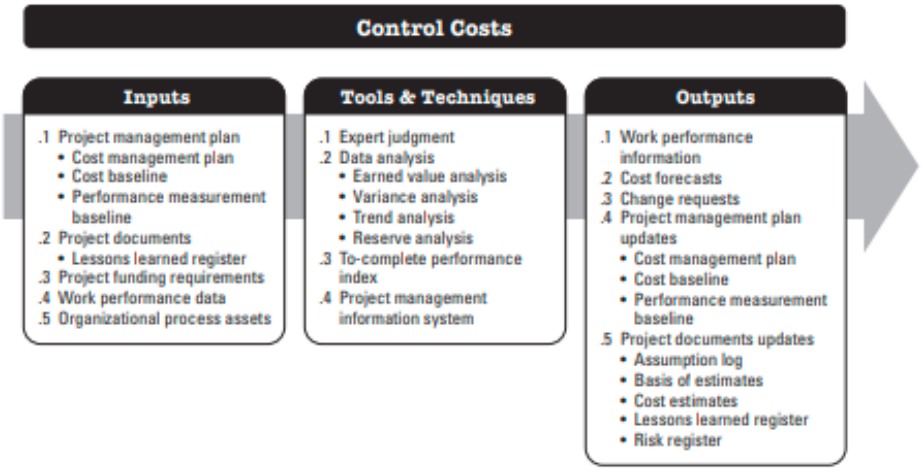
Figure 16. Determine Budget inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



4. Control cost:

Cost control is the process of measuring cost variances from the baseline and taking appropriate action. The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 17. control costs inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



d. Project Quality Management

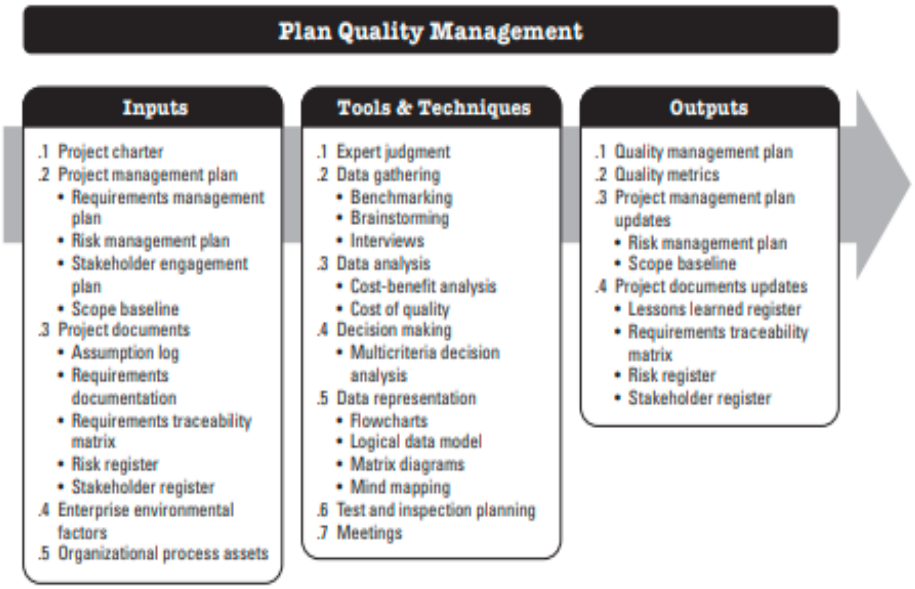
Project quality management includes the process for incorporating the organization's quality policy regarding planning, managing, controlling and product quality requirements in order to meet stakeholders' objectives. Project Quality Management also supports continuous process improvement activities as undertaken on behalf of the performing organization. PMBOK guide 6th edition, page271)

The project quality management has three processes that are displayed throughout the project phases.

1. Plan quality management:

Plan Quality Management is the process of identifying quality requirements and/or standards for the project and its deliverables and documenting how the project will demonstrate compliance with relevant quality requirements (PMBOK guide 6th edition, page277). The details regarding the inputs, tools and techniques, and output are provided in the figure below.

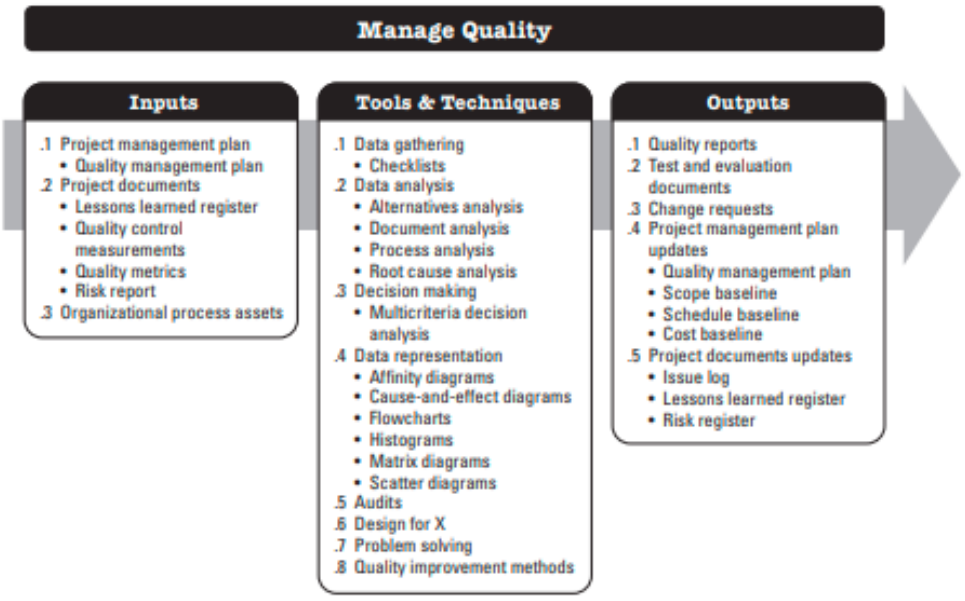
Figure 18. Plan Quality Management inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



2. Manage quality:

This process uses the quality management plan to implement specific quality related activities. These activities are related to quality assurance to ensure compliance or suggest improvement. Details regarding the inputs, tools and techniques, and outputs are provided in the figure below.

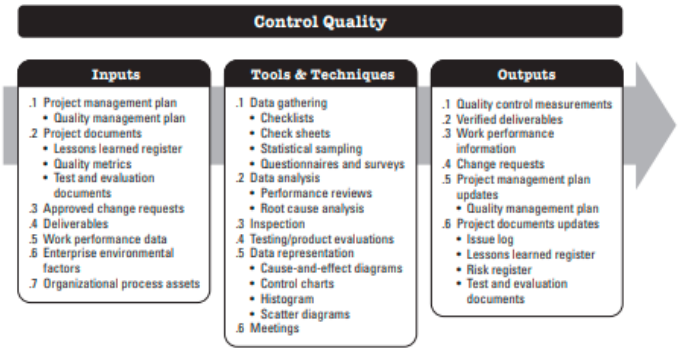
Figure 19. Manage Quality inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



3. Control quality:

Control Quality: PMBOK defines it as the process of monitoring and recording results of executing the quality management activities in order to assess performance and ensure the project outputs are complete, correct, and meet customer expectations. (PMBOK guide 6th edition, page 298). The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 20. Control Quality inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



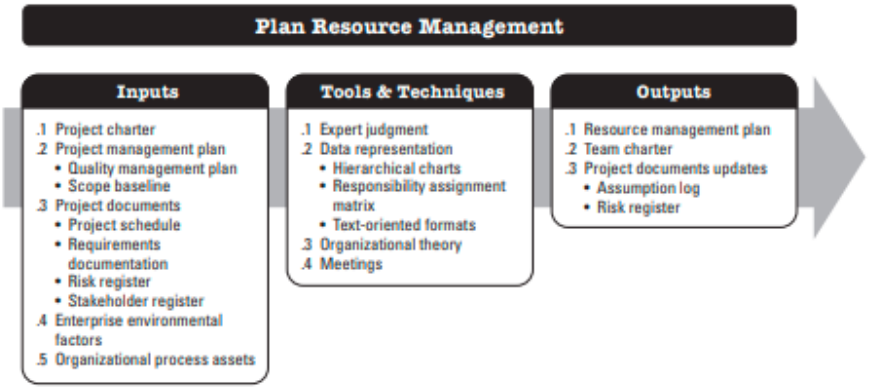
e. Project Resource Management:

Project resource management includes the processes of identifying, acquiring, and managing the resources needed for the successful completion of the project. These processes help ensure that the right resources will be available to the project manager and project team at the right time and place. The Resource Management area contains six (6) processes

1. Plan Resource Management:

As per the PMBOK, it is the process of determining how to estimate, acquire, manage, and utilize physical and human resources. It is part of the planning process group & performed once or at predefined points. Project team members and key stakeholders usually participate in it. Details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 21. Plan Resource Management inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

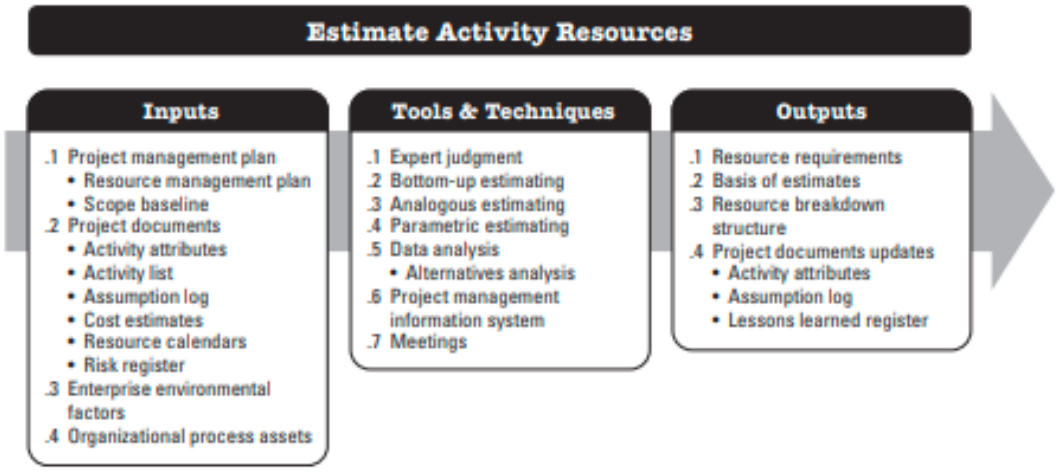


The proposed FGP will mobilize significant and substantial resources, both physical and human, in order to achieve the intended objective (.) thus, the project will strictly apply the process in order to ensure the procedures, practices and principles for mobilizing resources are in place, and to equip the project team with effective tools allowing them to mobilize resources and make them accessible when and where needed.

2. Estimate Activity Resources:

This process consists of identifying the type, quantity and characteristics of resources needed to complete the project successfully. It is part of the planning process group & conducted periodically, throughout the project. The resources requirements and Resource Breakdown Structure are the key outputs. Details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 22. Estimate Activity Resource inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

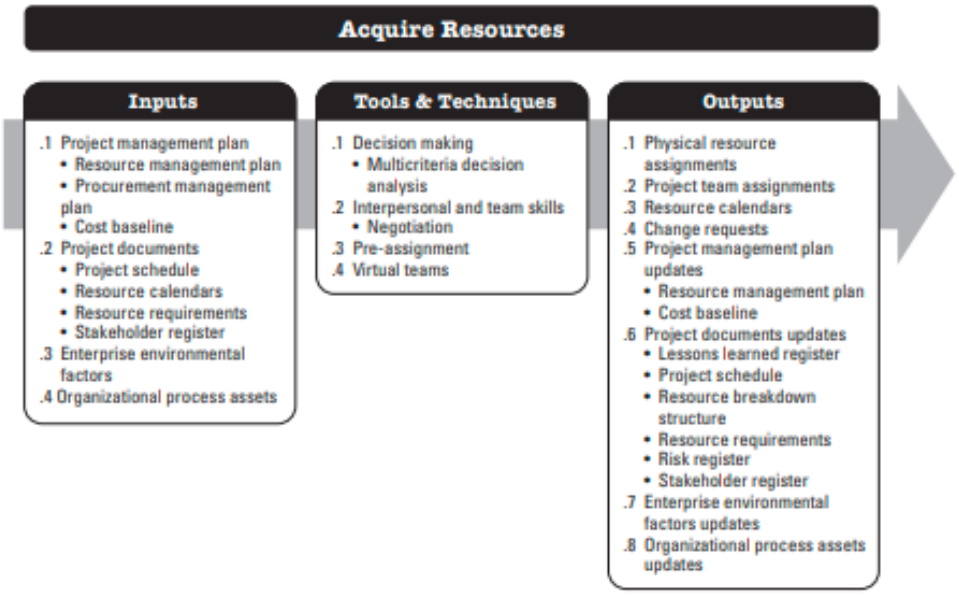


The construction of the emergency shelter, like any other construction project, will require the mobilization of enormous resources, both human and material. At this level the project, the PM of the FGP will identify, through a combination of tools and techniques, the human and material resources that will be necessary for the proper execution of the project.

3. Acquire Resources

This is the process of obtaining the teams, facilities, equipment, materials, and other resources needed to complete the project. It is in the executing process group and done periodically, throughout the project. It helps to select the resources and their assignment to the project activities. Resources are acquired internally (assigned by functional or resources managers) and externally (acquired, leased) through procurement. Project managers and teams may not have the authority to select the vendors. If not properly done, it will negatively impact project budget, schedule, customer satisfaction etc. Details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 23. Acquire Resource inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

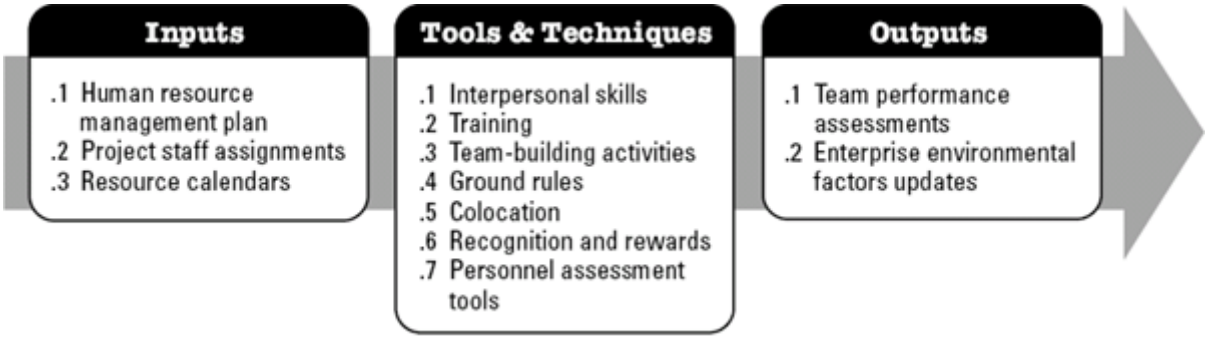


4. Develop Project Team

This process consists of improving competencies, team member interaction, and overall team environment to enhance project performance. The key benefit of this process is that it results in improved teamwork, enhanced people skills and competencies, motivated employees, reduced staff turnover rates, and improved overall project performance (PMBOK guide 6th edition, page 336). Details

regarding the inputs, tools and techniques, and output are provided in the figure below.

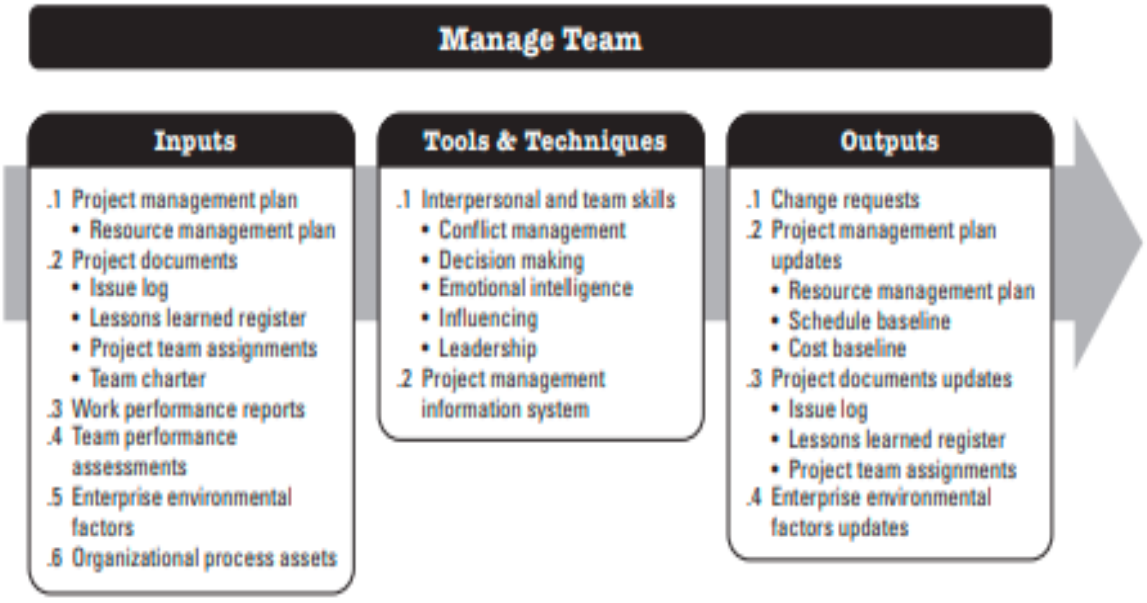
Figure 24. Develop team inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



5. Manage Team:

This is the process of tracking team member performance, providing feedback, resolving issues, and managing team changes to optimize project performance (PMBOK guide 6th edition, page 345). The figure provides details on the inputs, tools and techniques and output of this process.

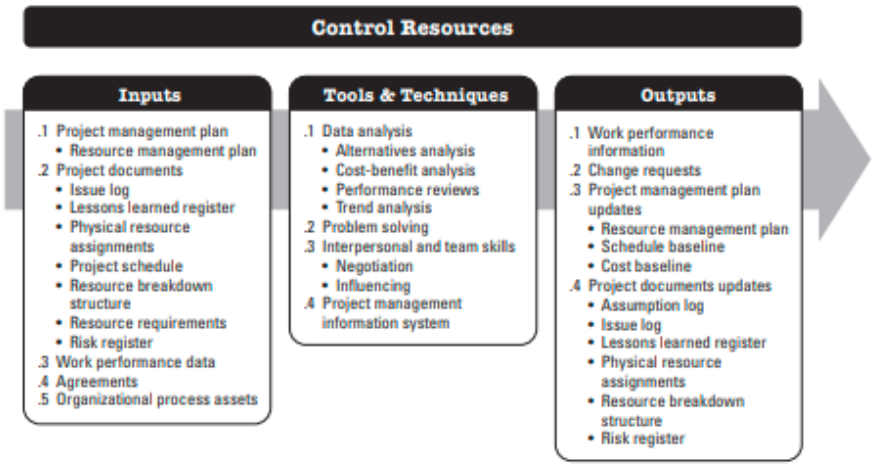
Figure 25. Manage team inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



6. Control Resources:

It is the process of ensuring that the resources allocated to projects are available as intended. It also monitors the resources management plan to ensure that the management of resources is done according to plan, and to take corrective measures if necessary. The figure below provides details on the inputs, tools and techniques and output of this process.

Figure 26. control resources inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



f. Project Communications Management:

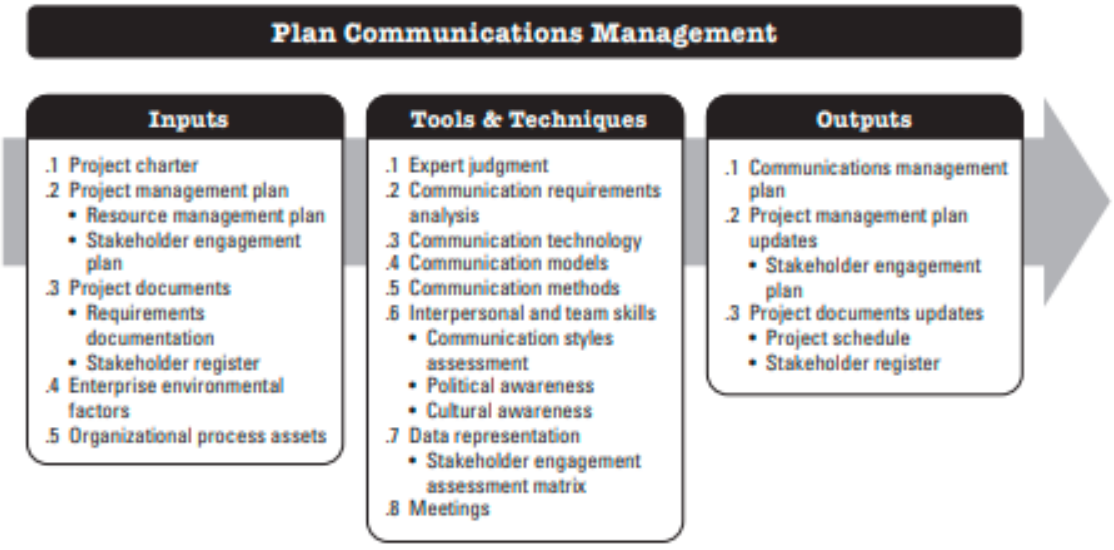
Project communications management corresponds to the set of processes which make it possible to ensure that right messages are sent, received, and understood by the right stakeholders. This knowledge area contains three processes: Plan Communication Management – Manage communications- Monitor communications.

1. Plan Communication Management:

It is the process that defines the procedures and approaches that ensure the information needs of the stakeholders and the project are addressed. It documents how communication will be managed and controlled throughout the project

implementation. It is conducted throughout the project. The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 27. Plan communication management inputs, tools and techniques, and output (PMBOK Guide 6ht edition)

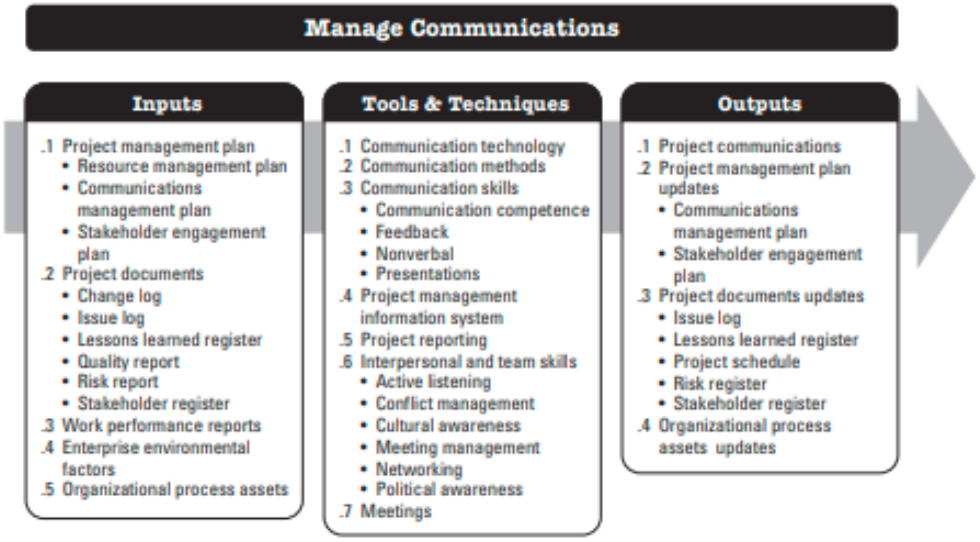


The project management plan for the construction of the emergency shelter which will be designed under the FGP, will consider the communication management plan for the project. Indeed, the project has multiple stakeholders (DGPC, the local authorities, community leaders, suppliers, construction firm, families living in risk areas etc.) with specific interests, roles, and responsibility. Thus, a communication plan that is considering the information needs of different interest groups would reduce the risks of confusion, misinterpretation, and negative perception for the benefit of the appropriation of project activities by the community and State authority. Since the project will be implemented by a multidisciplinary team, the communication plan will also take into consideration the internal information needs of the project, in order to facilitate internal coordination and teamwork, and reduce the risk of miscommunication which could affect the smooth running of the project activities, and caused conformities issues, delays and unnecessary expenses.

2. Manage Communications

It is the process of ensuring timely and appropriate collection, creation, distribution, storage, retrieval, management, monitoring, and the ultimate disposition of project information (PMBOK guide 6th edition, page 379). The details regarding the inputs, tools and techniques, and output are provided in the figure below.

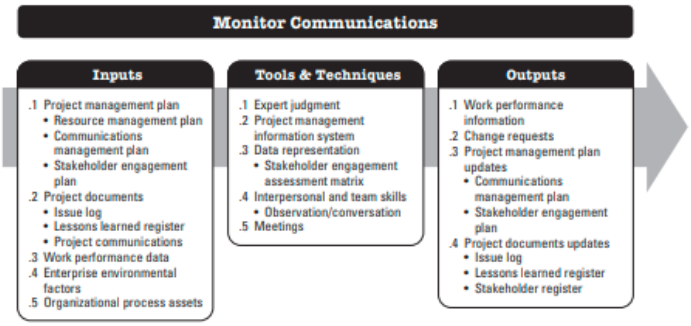
Figure 28. Manage communications inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



3. Monitor Communications

PMBOK defines the monitor communications, as the process of determining if the information needs of the project Stakeholders are met. The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 29. Monitor communications inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



g. Project Risk Management:

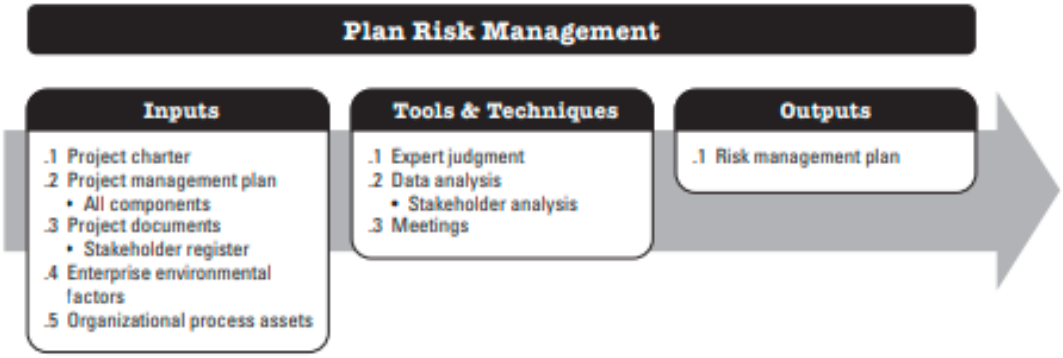
The PMBOK Guide defines risk management planning, identification, analysis, responding planning, response implementation, and monitoring risk on a project. The objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and / or impact of negative risks, in order to optimize the chances of project success.

Regardless of the location, the nature of a project, the quantity and quality of resources allocated to it, the latter remains exposed to a set of factors, over which the project has no control, which can disrupt or facilitate the implementation of the project, positively or negatively, its performance and the expected results. The PM of the FGP intends to make risk management a priority in the development of the project management plan because by the time a risk materializes it may be too late to address it. The risks to which the construction project could have irreparable consequences on the key constraining factors of the project such as costs, schedule, quality, resources etc. If we do not consider risk management in the development of the project management plan, the problems for which the project was designed for, may not ~~to~~ be solved, which could contribute to aggravating the vulnerability of the families of the municipality of Beaumont, but also contribute to further deteriorate the reputation of the DGPC.

1. Plan Risk Management:

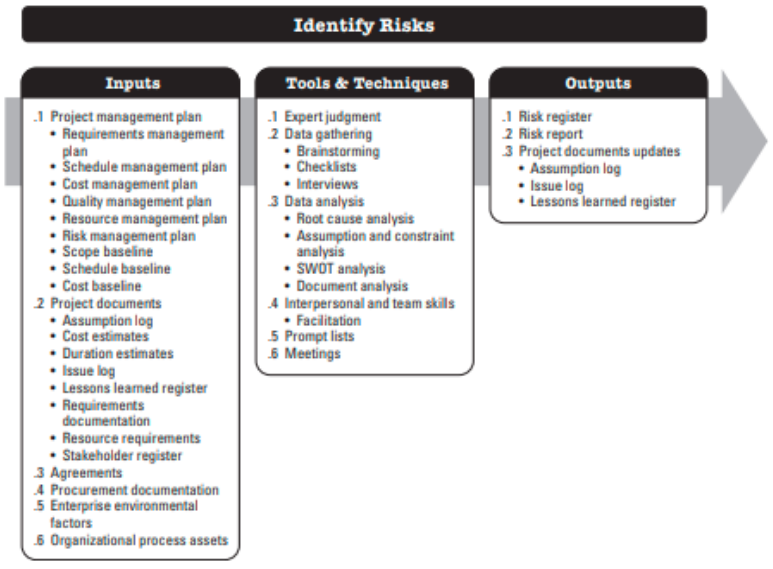
It is the process of defining how to conduct risk management activities for a project (PMBOK guide 6th edition, page 379). It is conducted throughout the project implementation. The details regarding the inputs, tools and techniques, and output are provided in the figure below.

Figure 30. Plan Risk Management inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



2. Identify Risk

According to the PMBOK, this is the process of identifying individual project risks as well as sources of overall project risks and documenting their characteristics. output are provided in



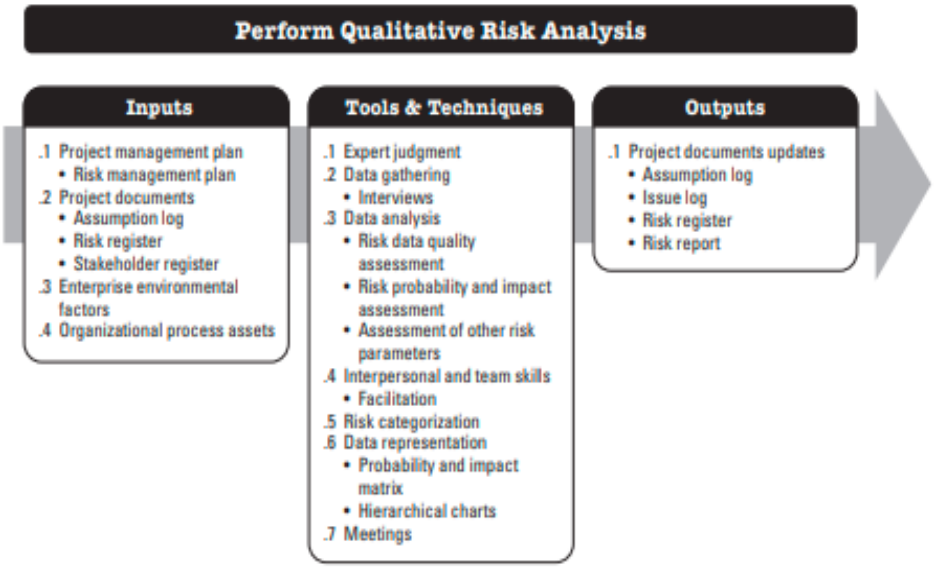
e 6ht edition)

Generally, the government funds its project from its own funds' sources, and it is often not accountable to any entity. Due to this flexibility, the government entities do not force to spend time on identification and analysis of risks, which partially justifies the non-completion of many government led projects. This process will allow DGPC to become familiar with the risk analysis tools. Risk identification is an iterative process. As the program progresses, more information will be gained about it (e.g., specific design), and the risk statement will be adjusted to reflect the current understanding. New risks will be identified as the project progresses through the life cycle.

3. Perform Qualitative Risk Analysis:

Qualitative risk analysis prioritizes the identified project risks using a pre-defined rating scale. Risks will be scored based on their probability or likelihood of occurring and the impact on project objectives should they occur (https://www.pmlearningsolutions.com/blog/announcement-ppm-launching-pmp-concept-learning-series). Details on the inputs, tools and techniques, and outputs ~~of~~ the Qualitative Process Performance can be found in the figure below.

Figure 32. Perform Qualitative Risk analysis inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



4. Perform Quantitative Risk Analysis

This is the process of numerically analyzing the combined effect of identified individual project risks and other sources of uncertainty on overall project objectives.

5. Plan Risk Response:

PMBOK defines it as the process of developing options, selecting strategies, and agreeing on actions to address overall project risk exposure, as well as to treat individual project risks. It is performed throughout the project.

Through the combination of the inputs, tools, and techniques the project manager of the FGP will develop response plan to address individual and overall project risks to increase the probability of success of the project. This will also contribute to changing the culture and improving the capacity of the DGPC, as a government entity, in planning and implementing.

6. Implement Risks Responses:

According to PMBOK this is the process of implementing agreed-upon risk response plan. It is performed throughout the project.

7. Monitor Risks:

It is the process of monitoring the implementation of agreed-upon risk response plans, tracking identified risks, identifying, and analyzing new risks, and evaluating risk process effectiveness throughout the project.

h. Project procurement management:

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside of the project team. Procurement Management includes the management and control processes required to develop and administer agreements such as contracts, purchase orders, memoranda of agreements (MOAs), or internal service level agreements (SLAs) (PMBOK guide 6th edition, page 459).

The Procurement Management Knowledge area has four processes: Plan Procurement Management, Conduct Procurements, and Control Procurements.

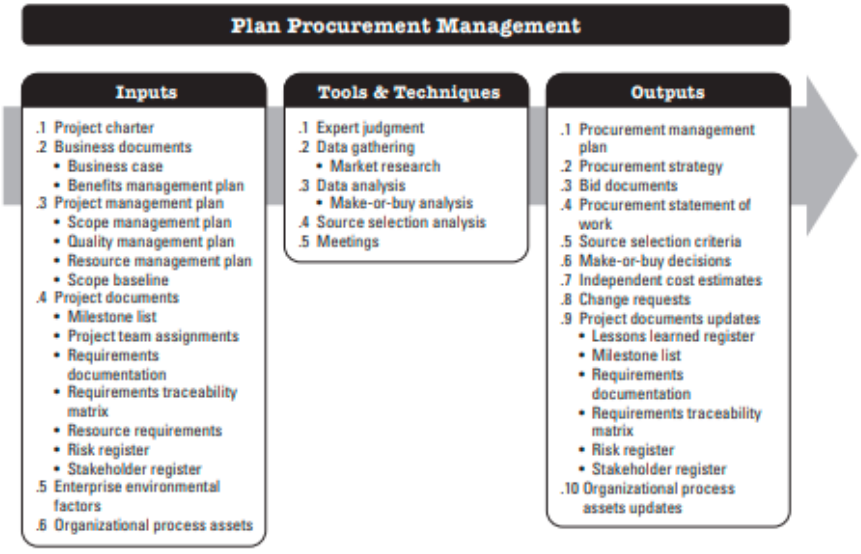
As per the PMBOK, some resources will be acquired externally through procurement during the implementation of the project. In the analysis of the problems to be addressed by the FGP project, the lack of transparency and impartiality in the process of acquiring goods and services constitute one of the main factors of the phenomenon of nonconformity or non-compliance, or non-completion of projects carried out by State entities. The proposed FGP is on the development of a Project Management Plan for the construction of an emergency shelter in the municipality of Beaumont in Haiti. Generally, construction projects are accompanied by the needs generated by the purchase of goods (Construction materials, equipment, vehicles, etc.) and services (technicians, labor, supervisors, support staff, transport, etc.). Consequently, the application of procurement management good principles and practices will be a key point to be considered in the development of the FGP. This will not only ensure that the project will have timely access to the necessary and high-quality goods and services but are also

acquired in all transparency. The project will influence the culture and strengthen the capacity of the DGPC in procurement management.

1. Plan Procurement Management:

This is the process of documenting project procurement decisions, specifying the approach and identifying potentials sellers. The key benefit of this process is that it determines whether to acquire goods and services from outside the project and, if so, what to acquire as well as how and when to acquire it (PMBOK guide 6th edition, page 466). The figure below provides details on inputs, tools and techniques, and output of the process.

Figure 33. Plan Procurement Management: inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



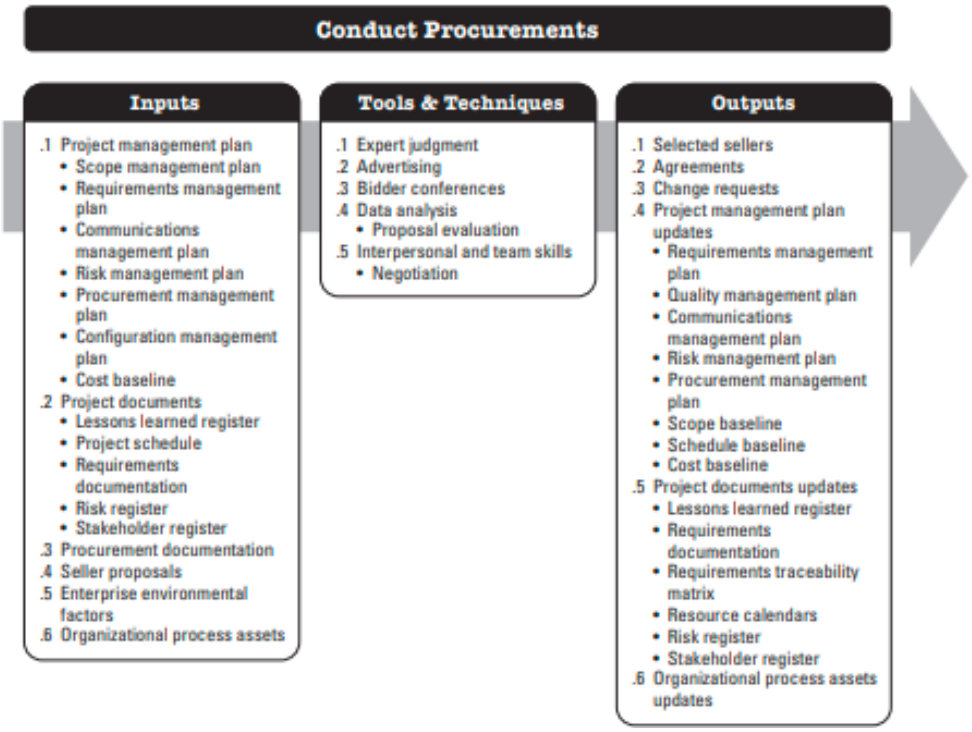
The development of Procurement Management Plan is one of the deliverables of the FGP. The appropriate principles, inputs, tools and technique will be used in the scope of the implementation of the process. The Plan Procurement Management process will allow key players, especially the DGPC, to know exactly what kinds of goods and services that the project will need, and when they will be needed. This process will also highlight the procedures and criteria to refer to for selecting

vendors of goods and services, the procedures relating to the types contracts to be applied and method to monitor and control, to ensure that the services and goods for which the project will pay will have been delivered and respect the specific detailed in the terms of references (TORs).

2. Conduct procurement

This is the process by which the actual work procurement is conducted. It involves: Obtaining seller responses - Selecting a seller and awarding a contract. The figure below provides details on the inputs, tools and techniques, and output of the conduct procurement process.

Figure 34. Conduct Procurement inputs, tools and techniques, and output (PMBOK Guide 6ht edition)



3. Monitor procurements:

This is process where the performance of the sellers is monitored against the contract, modifications and corrections are made as needed and the contractual relationship is maintained.

i. Project Stakeholders' Management:

This process includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholders' expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution (PMBOK guide 6th edition, page 503). Project stakeholder Management knowledge area has four processes:

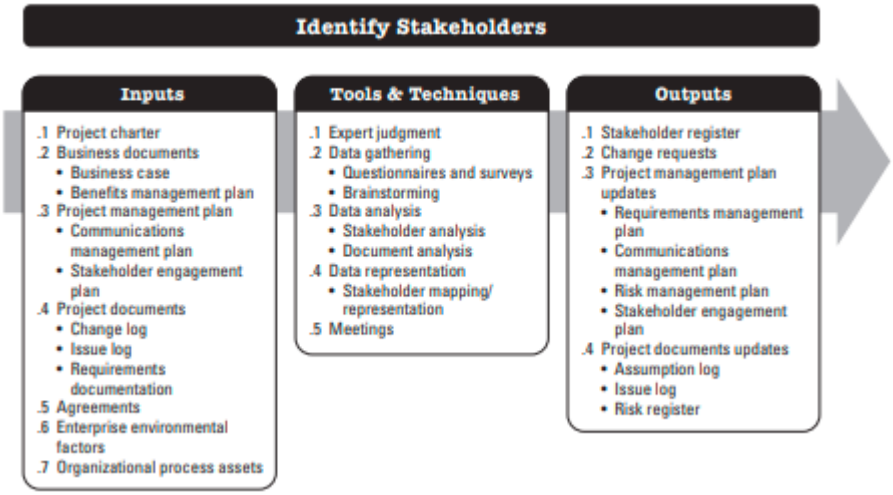
The omission, lack of involvement or commitment of stakeholders in a project can be the main cause of failure of this project. Whatever the nature of a project, it will have an effect or impact on people, interest groups, organizations, competitors etc. and vice versa; the project could be impacted by some of these actors. Thus, it is more than crucial for a PM to ensure that an effective and efficient management of the stakeholders is done throughout the implementation of the project. Obviously, the degree of consideration will depend on the capacity of influence of the actors on the project or the level of impact of the project on the actors, hence the importance of the exercise of prioritization of the stakeholders.

In the case of the FGP, it is planned to introduce new project management techniques into the organizational and operational culture of the DGPC, which will emphasize transparency, accountability, efficiency, and effectiveness. These changes will undoubtedly affect various actors who used to collaborate with the DGPC in the framework of other emergency shelter development projects including and not limited to construction firms, suppliers of construction materials, transporters, local authorities, DGPC employees etc. Habitat For Humanity, as new actors, the community of Beaumont etc. These changes will be accompanied by challenges, hesitations, questioning, and resistance which is why it will be necessary for the PM to ensure good stakeholders' management throughout the project implementation, and this should start when initiating and planning process groups.

1. Identify Stakeholders:

PMBOK defines it, as the process of identifying project stakeholders regularly while analyzing and documenting relevant information regarding their interest, involvement, interdependencies, influence, and potential impact on project success. It is conducted throughout the project as needed. The figure below provides details on the inputs, tools and techniques, and outputs of the identify stakeholders' process.

Figure 35. Identify Stakeholders inputs, tools and techniques, and output (PMBOK Guide 6ht edition



Through a combination of tools and techniques, such as Stakeholders mapping / representation, Brainstorming, questionnaires' surveys, document analysis and Stakeholders' analysis and meetings, the PM of FGP will continuously conduct identification and analysis to maintain the stakeholders' register updated and take their interest and engagement into consideration while implementing the project.

2. Plan Stakeholder Engagement:

This is the process of developing approaches to involve project stakeholders based on their needs, expectations, interest, and potential impact on the project. (PMBOK guide 6th edition, page 516).

A stakeholder engagement plan is one of the deliverables of the FGP, as mentioned above, it is extremely important for the project to identify the stakeholders, know their needs, interests, and capacities to influence the project,

and know how to interact with them. Thus, the Stakeholder Management Plan that will be developed by the FGP will establish the procedures, approaches, and principles to which the project team will have to refer to ensure stakeholder engagement, manage and monitor it.

3. Manage Stakeholder Engagement:

According to the PMBOK, this is the process of communicating and working with stake holders to meet their needs and expectations, address issues, and foster appropriate stakeholder engagement involvement.

4. Monitor Stakeholder:

PMBOK defines it as the process of monitoring project stakeholder relationships and tailoring strategies for engaging stakeholders through the modification of engagement strategies and plans.

2.3. Other applicable theory/concepts related to the project topic and context

2.3.1. Hurricane Season

Hurricane Season in the Atlantic begins June 1 and runs through November 30, with peak season from mid-August to late October

2.3.2. United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) established an international environmental treaty to combat "dangerous human interference with the climate system", in part by stabilizing greenhouse gas concentrations in the atmosphere. [1] It was signed by 154 states at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from June 3 to June 14 ~~June~~ 1992 (UN Climate Change, ANNUAL REPORT , 2017)

2.3.3. Sphere standards

The Sphere standards are a set of principles and minimum humanitarian standards in four technical areas of humanitarian response: Water supply, sanitation, and hygiene promotion (WASH) food security and nutrition, shelter and settlement. The sphere standards will be used in the FGP to determine the size, water storage capacity of the building and the sanitation facilities that the emergency shelter should have.

2.3.4. Emergency Shelter

An Emergency Shelter is a place “for people to live TEMPORARILY when they cannot live in their previous residence.” An emergency shelter usually accommodates people fleeing a specific situation related to disasters, violence, strife and/or abuse. Emergency shelters are often provided by governments, organizations or private individuals, and due to their varied types (such as tents, temporary structures or buildings normally used for alternative purposes), they cause “emergency shelters to be synonymous to the term ‘settlements.” Settlements may be occupied by disaster affected families for the entire reconstruction process. (Emergency Shelter Management Manual For Shelter Managers and Coordinators in the Commonwealth of Dominica (First Edition) June 2019)

2.3.5. Internally Displaced Persons (IDPs)

IDPs are “persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of: armed conflict, situations of generalized violence, violations of human rights, natural or human made disasters and who have not crossed an internationally recognized State border.” (Guiding Principles on Internal Displacement, 1998)

2.3.6. Disaster

A Disaster is defined as “an overwhelming ecological or man-caused occurrence that, with or without warning, disrupts the normal pattern of life. It can plunge a country into economic confusion and suffering going from the need for food, shelter, clothing, medical attention, and to other basic needs, as well as from the burdens of national economic infrastructure rehabilitation, possibly requiring outside assistance”. The impact of a disaster often surpasses the ability of the affected society to cope utilizing its own resources. (Dominica National Disaster plan, 2001)

2.3.7. Prevention

It refers to the outright avoidance of adverse impacts of hazards and related disasters (UNISDR 2009.)

2.3.8. National Building Code of Haiti

The National Building Code of Haiti (CNBH), a comprehensive building Code, is a national instrument providing guidelines for regulating the building construction activities across the country.

2.3.9. Construction Project

It is referred to as a ‘project’. It is the organized process of constructing, renovating, refurbishing, etc. a building, structure or infrastructure. The project process typically starts with an overarching requirement which is developed through the creation of the following: a brief, feasibility studies, option studies, design, financing and construction. Construction projects are typically a project team, brief and financing are put together to produce a unique design that delivers a single project. Once the project is complete, the team is disbanded and sometimes will no longer work together again. (https://www.designingbuildings.co.uk/Construction_project)

2.3.10. International Human Rights

The International Human Rights Law recognizes everyone's right to an adequate standard of living, including adequate housing. Adequate housing was recognized as part of the right to an adequate standard of living in the 1948 Universal Declaration of Human Rights and in the 1966 International Covenant on Economic, Social and Cultural Rights.

3. METHODOLOGICAL FRAMEWORK

3.1. Information sources

An Information Source is anything that might inform a person about something on providing knowledge to somebody. Information sources may be observations, people speeches, documents, pictures, organizations etc.

(https://www.lisbdnetwork.com/sources-of-information/)

3.1.1. Primary sources

Primary sources are original materials on which other research is based. They come from the time period that you are researching. They are usually the first formal appearance of results in physical, print or electronic format. They present original thinking, report a discovery, or share new information (LibGuides at Yale University, 17 Feb. 2016).

To gather sufficient information for the elaboration of the FGP, a combination of primary information sources will be used. They will include but not limited to meetings, Audio recordings, official documents (Publication of the formation of the DGPC decree), interviews reports, emails.

3.1.2. Secondary sources

Secondary Sources are accounts written after the benefit of hindsight. They interpret, evaluate, analyze, summarize, process, discuss, and describe primary sources. They are not evidence but commentary on and discussion of evidence. (LibGuides at Yale University, 17 Feb. 2016).

A wide range of secondary information sources will be used to gather information for the development of the FGP. They will include but not limited to PMBOK guide 6th edition, Shelter Projects Essentials (International Organization for Migration, March 2021), The National Building Code of Haiti (CNBH), The Universal Declaration of Human Right etc.

Chart 1. Information sources: (Source: LibGuides at Yale University, PMBOK guide 6th edition, University of Newcastle Library Guides)

Objectives	Information sources	
	Primary	**Secondary**
1. To create the project charter that will be used as input in the elaboration of the different objectives / Management plans.	Minutes meeting, interviews, emails, original documents (Government Decree),	PMBOK guide 6th edition - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Right,
2. To design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project and manage them to ensure completion within the boundaries agreed upon with the stakeholders	Minutes meeting, interviews, emails, original documents (Government Decree),	PMBOK guide 6th edition - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Right - The Humanitarian Charter and Minimum Standards in Disaster Response (The Sphere Handbook) - Shelter Management Guide Evacuation (2013 version)
3. To Create a schedule	Minutes meeting,	PMBOK guide 6th edition-

management plan, which will take into consideration approaches, methods, processes and procedures that will guide the determination and management of the time allocated to project activities and ensure its completion within ~~and~~ budget.	interviews, emails, original documents (Government Decree),	Architectural Design - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Rights - Emergency Shelter Assessment Report -Practice Standard For Project Estimating, 2nd, edition, PMI.
4. To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.	Minutes meeting, interviews, emails, Original documents (Government Decree),	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Rights - Emergency Shelter Assessment Report - Practice Standard For Project Estimating, 2nd, edition, PMI.
5. To build a project quality management plan which will prioritize the processes and	Minutes meeting, interviews, emails	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March

procedures that will facilitate the definition of criteria and indicators for quality measures and guarantee the satisfaction of the expectations of the project stakeholders.		2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Right.
6. To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project	Minutes meeting, interviews, emails, original documents (Government Decree),	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Rights - Emergency Shelter Assessment Report - Practice Standard For Project Estimating, 2nd, edition, PMI.
7. To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation	Minutes meeting, interviews, emails, original documents (Government Decree),	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Right - Emergency Shelter Assessment Report

processes.		
8. To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the outcomes of the project.	Minutes meeting, interviews, emails, Original documents (Government Decree),	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Rights
9. To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will be also prioritized.	Minutes meeting, interviews, emails, original documents (Government Decree),	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March 2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Rights.
10. To produce a stakeholder management plan that will establish the	Minutes meeting, interviews, emails, original documents	PMBOK guide 6th edition- Architectural Design - Shelter Projects Essentials (International Organization for Migration, March

methods and approaches facilitating the engagement of actors who can influence whether upstream or downstream, the outcomes of the project.	(Government Decree),	2021) - The National Building Code of Haiti (CNBH) - The Universal Declaration of Human Rights

3.2. Research methods

Research has been described as a systematic investigation (Burns, 1997) or inquiry whereby data are collected, analyzed, and interpreted in some way in an effort to "understand, describe, predict or control an educational or psychological phenomenon or to empower individuals in such contexts" (Mertens, 2005, p.2).

The University of Newcastle defines the research methods as the strategies, processes or techniques utilized in the collection of data or evidence for analysis to uncover new information or create better understanding of a topic.

There are different types of research methods which use different tools for data collection.

3.2.1. Qualitative research

Gathers data about lived experiences, emotions or behaviors, and the meanings individuals attach to them. It assists in enabling researchers to gain a better understanding of complex concepts, social interactions, or cultural phenomena. This type of research is useful in the exploration of how or why things have occurred, interpreting events and describing actions (University of Newcastle Library Guides).

3.2.2. Quantitative Research

Gathers numerical data which can be ranked, measured or categorized through statistical analysis (University of Newcastle Library Guides)..

3.2.3. Mixed Methods Research

Integrates both Qualitative and Quantitative Research (University of Newcastle Library Guides).

The FGP will use a mixed method, but mostly dominated by the qualitative research methods.

3.3. Analytical Method

Action-analytical strategy: The Action-analytical strategy is the analysis framework on which the FGP Will be based on. According to M. Naaranoja, the Action-analytical research strategy consists of studying the current practices and aims to improve the practices. The research subject is examined in the light of history, practices and theory. This approach is applied using qualitative methods. The close connection of the researcher and the subject is typical for this research strategy, though the tightness of connection varies (Olkkonen 1993). According to Stringer (1999) in action research the researcher often aims to solve a problem with the practitioners. The figure below gives a comprehensive representation of the research action-analytical strategy that will be the framework for the FGP.

Figure 36. View of the research subject according to action-analytical research strategy (Olkkonen,1993)

Indeed, as it was detailed in the problem statement sub-chapter (1.2), the Haitian State institutions face a constant challenge of non-completion of projects for a set of reasons. The failure of projects are mostly related to non-compliance with processes, procedures and principles of project management promoted by the PMI via the PMBOK. Thus, the FGP will focus on the analysis of these deficits in compliance with theories of project management and practices, and proposes Project Management processes and procedures that will serve as corrective measures that can guarantee the completion of projects according to plans, within schedule and budget.

Chart 2. Research methods: (Source : University of Newcastle Library Guides)

Objectives	Research methods
1. To create the project charter that will be used as input in the elaboration of the different objectives / management plans.	The framework of the action-analytical research strategy and theoretical framework, tools and techniques proposed by the PMBOK will be used ~~by~~ to create the project charter.
2. To design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project and manage them to ensure completion within the boundaries agreed with the stakeholders	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to develop the project scope management plan.
3. To Create a schedule management plan, which will take into consideration approaches, methods, processes, and procedures that will guide	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods Will also consider the theoretical framework, tools and techniques proposed

the determination and management of the time allocated to project activities and ensure its completion within ~~and~~ budget.	by the PMBOK to develop the project schedule management plan.
4. To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to develop the project cost management plan.
5. To build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures and guarantee the satisfaction of the expectations of the	The framework of the action-analytical research strategy supported qualitative data collection methods (survey, observation, meetings etc) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to develop the project quality management plan.

project stakeholders.	
6. To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to elaborate the project's resources management plan.
7. To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes.	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to create the project communication management plan.
8. To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods Will also consider the theoretical framework, tools and techniques proposed by the PMBOK to develop the project's risk

outcomes of the project.	management plan.
9. To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will be also prioritized.	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to develop the project's procurement management plan.
10. To produce a stakeholder management plan that will establish the methods and approaches facilitating the engagement of actors who can influence whether upstream or downstream, the outcomes of the project.	The framework of the action-analytical research strategy supported by qualitative data collection methods (survey, observation, meetings etc.) will be used. The action-analytical methods will also consider the theoretical framework, tools and techniques proposed by the PMBOK to develop the project's stakeholders management plan.

3.4. Tools

Merriam-Webster dictionary defines Tool as something (as an instrument or apparatus) used in performing an operation or necessary in the practice of a vocation or profession (https://www.merriam-webster.com/dictionary/tool).

PMBOK counts 132 tools among which the FGP's PM will refer to develop the Project Management Plan, sub-plans, and related project documents. The tools are grouped into several principal categories: Data Gathering Tools - Data Analysis Techniques - Data Representation Tools and Techniques – Decision Making Techniques - Communication Skills - Interpersonal and Team Skills - Ungrouped Tools and Techniques.

Due to the limited time allocated to the realization of the FGP, the tools that the PM will make use of are limited to the following:

a. Data gathering tools: They will be used to collect data and information. Data gathering tools are used to collect data and information from a variety of sources. The following list enumerates the data gathering tools: Check sheets, Checklists - Meetings

b. Data analysis tools: They will be used to organize, assess, and evaluate data and information: Risk Probability and Impact Assessment - SWOT Analysis

c. Data representation tools: They will be used to represent the data and information in visual format: Cause-and-Effect Diagrams - Flow charts - Probability and Impact Matrix - Stakeholder Engagement Assessment Matrix - Stakeholder mapping / representation

- Ungrouped Tools and Techniques : Critical Path Method - Decomposition (WBS) - Leads and Lags - Precedence Diagramming Method - Risk Categorization - Rolling Wave Planning

Chart 3. Tools: (Source PMBOK guide 6th edition, https://www.merriam-webster.com/dictionary/tool)

Objectives	Tools
1. To create the project charter that will be used as input in the elaboration of the different objectives / management plans.	Project Charter template and Project Management Plan template
2. To design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project and manage them to ensure completion within the boundaries agreed with the stakeholders	Meeting, Requirement's traceability matrix, MS project, Requirements Documentation template, meetings, Decomposition (Work Breakdown Structure), and Scope Management Plan template
3. To Create a schedule management plan, which will take into consideration approaches, methods, processes, and procedures that will guide the determination and management of the time allocated to project activities and ensure its completion within budget.	Schedule Management Plan template, Excel, Activity List template, meetings, Decomposition, analogous estimating, Parametric estimating, Critical path, meetings

4. To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.	Cost Management Plan template, Microsoft Excel, analogous estimating, Parametric estimating, Project Budgeting template,
5. To build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures and guarantee the satisfaction of the expectations of the project stakeholders.	Checklists, Meetings, Quality Management Plan template,
6. To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project	Resource Management Plan template, meetings, analogous estimating, Parametric estimating, Excel and Responsibility Assignment Matrix
7. To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes.	Stakeholders' engagement matrix, meetings, communication technology, Communications, Management Plan template, meetings

8. To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the outcomes of the project.	Cause-and-Effect Diagrams, meetings SWOT analysis, Risk Management Plan template, and Risk Register template
9. To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will be also prioritized.	Procurement Management Plan template, meetings
10. To produce a stakeholder management plan that will establish the methods and approaches facilitating the engagement of actors who can influence whether upstream or downstream, the outcomes of the project.	Stakeholder Management Plan template, Microsoft Excel, Stakeholder Register template, Stakeholder Engagement Assessment Matrix,

3.5. Assumptions and constraints

According to Cambridge Dictionary assumption is a willingness to accept something as true without question or proof. While the PMBOK considers them as factors to be in place or in evidence (PMBOK guide 6th edition, page 33). In other words, these are the conditions that must be met for the objectives of the project to be achieved. Within the framework of the FGP we assume that the PM will be able to develop, on his own, the Project Management Plan, and all related plans and documents within a period of 3 months. In addition, the stability of the prices, the availability of the standards for the basis of the calculation of the cost related to the

construction of the emergency shelter are some of the additional assumptions that have been considered in the scope of the FGP.

The project constraints are limiting factors for your project that can impact quality, delivery, and overall project success

https://www.workfront.com/project-management/knowledge-areas/project-constraints).

Due to its unique nature and all the factors defining its uniqueness such as: time limit, having a predefined budget, clear and predefined requirements, and well-defined objectives, the project is influenced by a set of constraining factors. Within the framework of the FGP, it is clearly defined that the project should be completed in three months, the PM is the only resource available to complete the project. The project should be emphasized on a project management plan which constitutes the framework defining the scope of the project. Details on the assumptions and constraints of the project are provided in Chart 4.

Chart 4. Assumptions and constraints: (Source PMBOK guide 6th editio n, FGP project charter,)

Objectives	Assumptions	Constraints
1. To create the project charter that will be used as input in the elaboration of the different objectives / management plans.	The charter will be created before all other subsidiary documents.	The charter has to be developed in a week.
2. To design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project and manage them to ensure completion within the boundaries agreed with the stakeholders	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all

Objectives	Assumptions	Constraints
	for the next 4 months Only 1 person can develop the Project Management Plan, The PM has all the required skills	plans),
3. To Create a schedule management plan, which will take into consideration approaches, methods, processes, and procedures that will guide the determination and management of the time allocated to project activities and ensure its completion within ~~and~~ budget.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all plans),

Objectives	Assumptions	Constraints
	for the next 4 months Only 1 person can develop the Project Management Plan, The PM has all the required skills	
4. To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the Project Manager is working on all plans),

Objectives	Assumptions	Constraints
	Only 1 person can develop the Project Management Plan, The PM has all the required skills	
5. To build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures and guarantee the satisfaction of the expectations of the project stakeholders.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all plans),

Objectives	Assumptions	Constraints
	Only 1 person can develop the Project Management Plan, The PM has all the required skills	
6. To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all plans),

Objectives	Assumptions	Constraints
	Only 1 person can develop the Project Management Plan, The PM has all the required skills	
7. To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months Only 1 person can develop the	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all plans),

Objectives	Assumptions	Constraints
	Project Management Plan, The PM has all the required skills	
8. To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the outcomes of the project.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months Only 1 person can develop the Project Management Plan,	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all plans),

Objectives	Assumptions	Constraints
	The PM has all the required skills	
9. To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will be also prioritized.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months Only 1 person can develop the Project Management Plan, The PM has all the required skills	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the Project Manager is working on all plans),

Objectives	Assumptions	Constraints
10. To produce a stakeholder management plan that will establish the methods and approaches facilitating the engagement of actors who can influence whether upstream or downstream, the outcomes of the project.	Three months are sufficient to complete the project Information to develop the Project Scope Management Plan will be accessible The prices of materials will be stable for the next 4 months Only 1 person can develop the Project Management Plan, The PM has all the required skills	Limited time to develop the Project Scope Management (Only three months allocated to the development of the PMP). Limited human resources (Only the project manager is working on all plans),

3.6. Deliverables

A deliverable is any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project. Deliverables are typically the outcomes of the project and can include components of the project management plan (PMBOK guide 6th edition, page 95). The deliverables of the FGP will consist of the development of the project management plan including the sub-plans and project documents relating to the different project knowledge areas. The deliverables will include and will not be limited to: Project Charter, Project scope management Plan, Project communication management Plan, Project resource management Plan, Project Cost Management Plan, Project Procurement Plan, Project Schedule Management Plan, Project Risks Management Plan, Project Quality Management Plan, Project Stakeholders Management Plan. Details on additional deliverables will be given in ~~the~~ Chart 5.

Chart 5. Deliverables: (Source PMBOK guide 6th edition)

Objectives	**Deliverables**
1. To create the project charter that will be used as input in the elaboration of the different objectives / Management plans.	Project charter
2. To design a project scope management plan that will establish the methods and procedures to define the	Scope Management Plan, Requirements Management Plan, Requirements Document and

nature, expectations and limits of the project and manage them to ensure completion within the boundaries agreed with the stakeholders	Requirements Traceability Matrix
3. To Create a schedule management plan, which will take into consideration approaches, methods, processes, and procedures that will guide the determination and management of the time allocated to project activities and ensure its completion within ~~and~~ budget.	Schedule Management Plan, Activity List, Schedule Network Diagram, Resource assignments and activity durations, and Schedule in Gantt chart
4. To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.	Cost Management Plan, Cost Baseline and Project Funding Requirements
5. To build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures and guarantee the satisfaction of the expectations of the project stakeholders.	Quality Management Plan

6. To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project	Resource Management Plan
7. To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes.	Communication Management Plan and Communications Matrix
8. To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the outcomes of the project.	Risk Management Plan and Risk Register
9. To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will also be prioritized.	Procurement Management Plan
10. To produce a stakeholder management plan that will establish the	Stakeholder Management Plan, Stakeholder Analysis Chart, and

methods and approaches facilitating the engagement of actors who can influence whether upstream or downstream, the outcomes of the project.	Stakeholder Register

4. RESULTS

4.1. Scope Management Plan1

4.1.1. Scope Management Introduction

Project Scope Management are a set of processes to ensure that the Emergency Shelter construction project considers only all the work that needs to be undertaken to achieve the expected results and complete the project, while excluding all the work that is not required. Thus, through the Plan scope management the Project Manager and the team describe how the project scope will be defined, validated, and controlled.

4.1.2. Collect Requirements

The project team under the leadership of the PM will collect the requirements of the stakeholders to define the scope of the project and clarify the project objectives. The PM will also ensure a proper documentation and manage stakeholders' requirements throughout the project life cycle to meet the project objectives. The requirements have been collected through a set of complementary tools and techniques to ensure a comprehensive collection of them. The PM supported by the project team will organize key informant interviews with key stakeholders including the sponsors (HFH, DGPC), the engineering team, the mayor of Beaumont, the head of civil protection of Beaumont, and few other community members from Beaumont to collect their requirements. In addition, the project team will organize focus groups' discussions with key stakeholders to collection additional requirements and verify those previously collected to reduce any risk of conflicting information. Finally, brainstorming sessions will be organized with project team to have the maximum requirements and complete the requirements collected. In addition the PM conducted detailed revision of the decree on the formation of the Head Quarters of Civil Protection (DGPC) of 2016, the revision of the various guidelines on the management of collective shelters prepared by the CCCM Cluster and coordinated by the Office of the United Nations High Commissioner for Refugees (UNHCR) and the International Organization for

Migration (IOM), the revision of legal texts relating to the rights of Internally Displaced Persons (IDPs) and the responsibilities of national authorities towards them, the review of the SPHERE Standard defining the thresholds for the humanitarian assistance. The chart below summarized the requirements collected during this process.

Chart 6. Project main collected requirements

Project main collected requirements				
Requirements ID	**Requirement categories**		**Requirements**	**Requirements' owners**
	Sub-categories 1	Sub-categories 2		
Rq001	Project	Schedule	Project duration should be 6 Months	Sponsors (HFH, DGPC)
Rq002		Cost	Project total Budget is maximum 300,000US dollars	Sponsors (HFH, DGPC)
Rq003		Monitoring & Control	Narrative and financial monthly progress report submitted	Sponsors (HFH, DGPC)

Rq004	requirements	Monitoring & Control	Change request requires sponsors approval	Sponsors (HFH, DGPC)
Rq005		Monitoring & Control	Quarterly presentation should be done	Sponsors (HFH, DGPC)
Rq006		Monitoring & Control	Sponsors approval is requirement for Designs	Sponsors (HFH, DGPC)
Rq007		Resources	4 direct staffs 5 indirect staffs will be allocated to the project	Sponsors (HFH, DGPC)
Rq008	Product requirements	Accessibility	Building is close to social basic services	Sponsors (HFH, DGPC)
Rq009			building is easily accessible to trucks	Sponsors (HFH, DGPC)
Rq0010			Ramps are 32 mm outside	Lead Engineers and

			diameter and 51 mm	field engineers
Rq0011			Entry/exit systems maximizing social distancing	Sponsors (HFH, DGPC)
Rq0012		Building size	Building size should be at least 500m2,	Sponsors (HFH, DGPC)
Rq0013			Building can accommodate 120 persons (3.5m2/pers)	Sponsors (HFH, DGPC)
Rq0014			living units allows proper / separation /privacy	HFH, DGPC, Residents of Beaumont, Emergency Shelter Guidelines
Rq0015		Building	Ceiling is made of hard board at minimum (10 mm) thickness	Lead Engineers and field engineers

Rq0016		structure and architecture	Hardwood panel doors of 7'-2" X 6'-4” installed,	Lead Engineers and field engineers
Rq0017		Energy & Electricity	The electrical services and equipment are fully installed	Lead Engineers and field engineers
Rq0018			Alternative energy sources installed (Solar panels and inverter system, generator gasoline)	DGPC, HFH, Mayor of Beaumont
Rq0019		Water and Sanitation infrastructures	The building is connected to or realistic opportunity to connect to water supply	Mayor, DGPC, HFH,
Rq0020			One functioning and lockable toilet per 10 people is	DGPC, SPHERE standards,

			accessible 24/7	HFH,

4.1.3. Define Scope

Through this process the PM and the project team developed, from the collected requirements, a detailed description of the project and product scope. This describes the boundaries of the project and complete the project scope. It outlines what is going to be delivered and will not be delivered, as part of the emergency shelter construction project. It is an extremely important process, because an ill-defined project scope can lead to misunderstanding, rework, conflict, dissatisfaction, unhappy customers, bad reputation, loss of customers and market share. Given the level of uncertainty that is inherent to the context and the project life cycle, changes in the scope will be necessary to be able to achieve the objectives of the project. The changes will be made throughout the project life cycle and can be from any stakeholder including the project team, DGPC, Mayor, Project Manager etc. whatever the nature of the changes, each must be documented and submitted for approval to the project manager or sponsor. The decision can either be accepted, rejected, or a change in question may be returned for further justifications and documentation.

4.1.4. Create WBS

The WBS is a central document of project management and part of the scope baseline. The Emergency Shelter construction project WBS has subdivided the project deliverables and project works into smaller and more manageable components. It provides a framework of several interrelated parts or components that need to be delivered as part of the project. The WBS is deliverables oriented, and not activities oriented. It considers the deliverables to be able to complete the objectives of the project but not a list of all activities.

4.1.5. Validate Scope:

This process will happen as the project progresses. Scope validation will be conducted through the combination of inspection and test/product evaluations. The inspection will be made by the PM and the project team based on a comparison between the work package completed and the standards defined in the requirements and the design of the building for that work package. The results of inspection activities will be presented to sponsors through monthly meetings, progress reports and photos. In addition, stakeholders and the project team will organize joint visits to the construction site and the buildings at the end of each phase of the construction to complete the validation process. Then, sponsors and other key stakeholders will provide their formal acceptance, which will be a written agreement/ acceptance. The results of the process can also be a request for changes in the deliverables. The changes will be documented into the log issues and conducted throughout the change process. The template below will be used to document the issues that will be raised by the stakeholders.

Chart 7. Issues Log of the emergency shelter construction project

Issues ID	Date identified	Identified by	Details of issues & effects	Specific actions and resolutions	Agreed owner	Date for completion

4.1.6. Control Scope

This is the process of monitoring the status of the project and the product scope and managing changes in the baseline of the scope. In other words, it is a critical comparative analysis of what should be considered in the project implementation and the product, and what should be avoided in order to ensure that the project is on track and will achieve the project objectives. The PM and the project will use

variance and trend analysis to monitor and control the project (time, cost) and product (specifications) progress to ensure that the project scope is on good path. This process can lead to all kinds of changes in the scope baseline, which is why in this instance the project manager must be accountable and furthermore to ensure that proper assessment of the change request is done. Some of these changes will have to be rejected to be able to keep the project on track.

4.1.7. Roles and Responsibilities

The project manager will be responsible for the project scope management and the guidance of the project team including project support team throughout the project implementation to ensure that the team remains within the boundaries established by the project scope. The team staff listed below will assume the following scope management responsibilities:

Chart 8. Roles and responsibilities in the scope management,

Name	Roles	Responsibilities
Jean Frenel Tham	Project Manager	a. Measure and verify project scope. b. Facilitate scope change requests. c. Facilitate impact assessments of scope change requests. d. Organize and facilitate scheduled change control meetings. e. Communicate outcomes of scope change requests. f. Update project documents upon approval of all scope changes.

DGPC Management, Habitat For Humanity management	Project Sponsor	a. Contribute to define requirements b. Approve or deny scope change requests as appropriate. c. Evaluate need for scope change requests. d. Accept project deliverables.
Lead Engineers, field Team	Project Team Members	a. Participate in defining change resolutions. b. Evaluate the need for scope changes and communicate them to the project manager as necessary.
Community leaders, Mayor, and other community-based organization.	Stakeholders & End users	a. Can propose scope changes b. Will execute change directives issued by Project Manager

4.1.8. Product Deliverables and Acceptance Criteria

The collective shelter building will need to meet a range of standards related to security, safety, basic services, accessibility, space, and density in order to promote dignity and avoid health and protection issues associated with overcrowding and other natural Hazards.

Chart 9. Project acceptance criteria:

Project acceptance criteria

Criteria ID	Criteria Categories	Description
Cr1	Security and safety	The building is located in safe and protected area, that is not under gangs' controls,
Cr2		The building is not located in areas prone to flooding, strong winds, or other environmental risks
Cr3	Land ownership	The land is state property, and ~~it~~ is not in a conflict dispute
Cr4		In case of donation, the donation certificate should be clearly co-signed by landowner and mayor.
Cr5		The building is easily accessible to trucks transporting humanitarian assistance provisions and other basic services (ambulance, garbage truck, fire trucks etc.).
Cr6		Common services on ground floor, bathroom facilities are accessible. The handrail should be rounded in shape, 1 1/4-inch (32 mm) minimum outside diameter and 2 inches (51 mm) maximum.

Cr7	Building accessibility	A handrail must be placed on both sides of the ramp or stairs. It must be extended by at least 28 cm beyond the first and last step.
Cr8		Entry/exit one-way systems to maximize social distancing and ease traffic flows
Cr9		The building is located in the proximity to social basic services (hospital, health center)
Cr10		The selection of location considers weather and climate issues (e.g., muddy roads during rainy seasons).
Cr11	Size & space distribution	The building size should not be smaller than 500m2,
Cr12		The building can accommodate 120 persons and considers 3.5m2 as area per person excluding kitchen facilities, common spaces, platform, and office
Cr13		The building allows proper separation/privacy of living units, communal areas, and other services such as office, storage, toilet,
Cr14		

	Ceiling	Ceiling is made of hard board at minimum (10 mm) thickness. Hard board ceiling must be finished with patterned design strips at least 1 ½ ‘’.
Cr15	Roofing	The roofing sheet must be 28-gauge alloy colored coated and corrugated roofing sheets.
Cr16		The roofing sheet shall be installed giving 6" minimum end laps and 2 corrugations side lap fixed to timber purlins at every third corrugation in the center of sheets and at every second corrugation of end laps with roofing nails and felt washers.
Cr17		The electrical services and equipment are fully installed and included cabling, wiring, and ducting and accessories, conduits, trenches, manhole, hand hole, power outlets, light fittings, switches, earthling system, lightening arrester systems etc.
Cr18		Access or opportunity to access electricity with proximity to transformers, meters, electrical panels
Cr19		Alternative means provided in case of power outages (Solar panels and inverter system, generator gasoline)
Cr20		All 250V receptacles shall be 3 wire three pole 15 amps flush mounted or flush type of approved

	Electrical and lighting	make. Power outlets ~~it~~ shall be switched type socket 15 amps
Cr21		All flush type switches shall be totally enclosed weatherproof type of 5 amps, rating for up to four light points of 10 amps for more than four light outlets being controlled by one switch.
Cr22		25 Solar Street Lights of 50W 18V LED are installed in the compound
Cr23	Doors and Windows	All doors shall be hardwood panel doors installed straight and square in their frames and measure 7'-2" X 6'-4".
Cr24		The doors shall have louvers at top to allow for cross ventilation
Cr25		The Windows shall be jalousie metal frame measuring 4'-4" X 3'-4".
Cr26		All tubing exposed on walls' faces shall be fixed being at least 25 mm clear of adjacent surfaces,
Cr27		The building is connected to a ~~or~~ realistic opportunity to connect to water supply

Cr28	Plumbing and Water	The building has hydraulic connections and cisterns for water reserve (The water supply should consider 25 liters per person per day)
Cr29		Solar panel heater for hot water in kitchen and bathroom
Cr30	Sanitary Fittings	The W.C pans are fixed to the floor with chromium plated screws and pointed with White mortar.
Cr31		At least one functioning and lockable toilet per 10 people is accessible 24/7
Cr32		The building is equipped with sewage and solid waste disposal systems
Cr33		All restrooms shall be fitted with handicapped enable bars and handle to aid use.
Cr34		All wash hand basins shall be securely fixed to the walls.
Cr35		All faucets fitted on wash hand basin shall be handicapped enable.

4.1.9. Project Constraints

The total cost of the project will not go beyond 300,000.00 US dollars, and the implementation of the project should remain within a timeframe of six months.

4.1.10. Project Assumptions

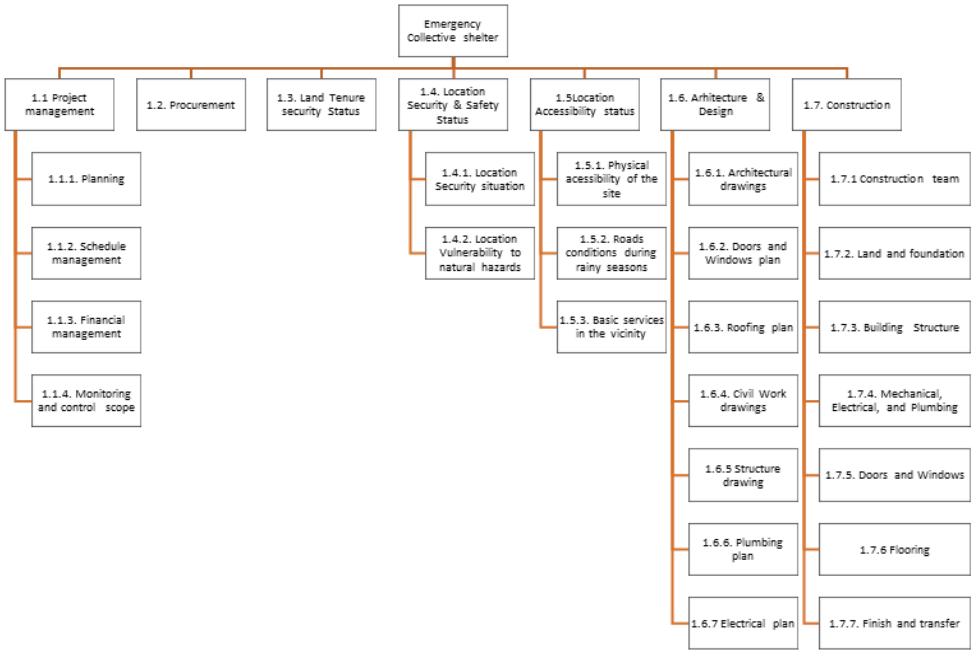
Assumptions will include:

1. Project scope will not change in the short to medium term,
2. The cost of the building materials will remain relatively stable over the course of the project,
3. Organization will provide the project team or staff to work on this project.

4.1.11. Work Breakdown Structure

The Work Breakdown Structure (WBS) and Work Breakdown Structure Dictionary are two key tools in project scope management. WBS breaks down project deliverables or work into more manageable components.

Figure 37. Project WBS



4.1.12. Project WBS dictionary

The WBS dictionary provides detailed interpretation of the tasks, activities, and deliverables of the work breakdown structure. It is closely linked to the project scope and presents milestones relating to resources, time, responsibilities etc.

Chart 10. WBS Dictionary (Source: F. Gen, April 2018)

WBS ID	Task Name	Description of Work	Deliverables	Budget	Resources
1.1	Project management			NA	PM, Sponsor, Stakeholders, DGPC and Habitat For Humanity management
1.1.1.	Planning	Planning and updating project activities throughout project lifecycle.	Project Management Plan		PM, Sponsor, Stakeholders, DGPC and Habitat For Humanity management

1.1.2.	Schedule management	Planning of project activities, assigning timeline and dates to determine, and control project duration.	Schedule - Gantt		PM and project team
1.1.3.	Financial management	Monitoring the financial expenditures of the project throughout the project lifecycle.	Financial Report		PM and project team
1.1.4.	Monitoring and control scope	Organizing project team meetings, documenting project activities, preparing reports and plan presentations to the appropriate stakeholders.	Project progress reports		PM and project team
1.2	Procurement	The process to identify and select architectural and construction firms	Terms of references, contract	NA	PM, DGPC and Habitat for Humanity procurement team

1.3	Land tenure security status assessment	Verification of land ownership.	Land title, occupation rights document	$3,500.00	PM, Sponsor, Mayor representatives, Legal experts / consultants (Lawyers, Notary surveyors)
1.4	Location Security & Safety Status	General security assessment of the area and region	Security assessment reports	NA	PM, Sponsor, Security experts/ consultant, Disaster Risk reduction experts
1.4.1	Location Security situation	Gangs' violence, political and community conflict dynamic assessment in the area,	Security assessment report	NA	PM, Sponsor, Security experts/ consultant,

1.4.2	Location Vulnerability to natural hazards	Disaster risks assessment of the location	Disaster risks assessment report	NA	PM, Sponsor, Disaster Risk reduction experts
1.5	Location Accessibility status	General accessibility of the location		NA	
1.5.1	Physical accessibility of the site	Assessment of the roads' conditions (size, paved, bumpy, muddy etc.)	Sites Accessibility report and security assessment reports	NA	PM, Sponsor, Roads experts
1.5.2.	Roads conditions during rainy seasons	Accessibility assessment based on weather conditions		NA	PM, Sponsor, Roads' experts

1.5.3.	Basic services in the vicinity	Mapping of the basic serivce providers (Health care, education, electricity, water etc.) in the proximity of the site	Mapping of basic services report	NA	PM, Sponsor, contextual analysis experts/consultants
1.6.	Architecture & Design	Provide ~~the~~ technical specifications and drawings of the building that will guide the construction works	Architecture & Design of the building	NA	PM, sponsor, stakeholders, and Architecture experts teams
1.6.1.	Architectural drawings	Drawings of the building	The Architectural drawings of the building including the facades	**NA**	PM, sponsor, stakeholders and Architecture experts teams

1.6.2.	Doors and Windows plan	The technical documents that provide details on the windows and doors of the building such as positions, size, distance, etc.	Doors and windows plans	**NA**	PM, sponsor, stakeholders and Architecture experts teams
1.6.3.	Roofing plan	It is a scaled drawing of the roof development providing detailed information on the roof structure, including shape, size, design and placement of all materials, ventilation, drainage,	The roofing plan	**NA**	PM, sponsor, stakeholders and Architecture experts teams

1.6.4.	Civil Work drawings	This is a technical document / drawing that provides detailed information about grading, sizing, and other site details. It gives a clear picture of all Works that will be undertaken in the sites. It will be used for tender process to provide information to the bidding firms	Architecture drawings documents	**NA**	PM, sponsor, stakeholders and Architecture experts teams
1.6.5.	Structure drawing	a plan or set of plans and details for how a building or other structure will be built		**NA**	PM, sponsor, stakeholders and Architecture experts teams

1.6.6.	Plumbing plan	Definition of the specifications and guideline for the works that will be undertaken in plumbing system of the building.	The Plumbing plan document / drawings and specifications and technical details	**NA**	PM, sponsor, stakeholders and Architecture experts teams
1.6.7	Electrical plan	Definition of the specifications and guidelines for the works that will be undertaken in electricity system of the building.	The electricity plan document / drawings and specifications and technical details	**NA**	PM, sponsor, stakeholders and Architecture experts teams
1.7.	Construction	Undertaking the construction of the different parts of the building,	The work completion report, the building	NA	PM, sponsor, and construction firm teams

1.7.1.	Construction team	It consists of setting up the construction team including carpenters, engineers, masons, electricians, plumbers. Furthermore, clear task assignment to each member of the team.	The organigram of the project teams	$35,433.00	PM, sponsor, and constructio n firm teams
1.7.2.	Land preparation and foundation	It refers to the works related to the preparation of the land, the implementation of	Foundation completion report, the completed foundation	$85,589.57	PM, sponsor, and constructio n firm teams
1.7.3	Building Structure	Constructions of the building superstructure parts based on the drawings, plans and other technical details provided by the architectural team.	The superstructur e construction reports & the building,	$41,059.56	PM, sponsor, and constructio n firm teams

1.7.4.	Mechanical, Electrical, and Plumbing	This is the implementation of the plumbing, electrical plans. It considers the installations of the wires, pipes, outlets, ~~etc.~~ ~~ect~~	The plumbing and electrical system installed	$49,277.72	PM, sponsor, and constructio n firm teams
1.7.5.	Doors and Windows	Installation of the doors and windows of the building	The windows and doors' installation and reports	$13,709.96	PM, sponsor, and constructio n firm teams
1.7.6	Flooring	Undertaking the works described in the plan and design to build the floor of the building.	The completion report of the flooring works	$33,649.93	PM, sponsor, and constructio n firm teams

1.7.7.	Finish and transfer	The finishing works will consist of plastering, painting, lighting, etc. The handing over of the keys to the building will be organized during a community ceremony.	The completion report of the finishing works, building is painted, outlets installed etc and the transferring ceremony	$22,049.20	PM, sponsor, Stakeholders and construction firm teams

4.2. Project Schedule Management Plan

4.2.1. Schedule Management Introduction

The management of the project schedule is the result of joint work that will involve the main stakeholders, DGPC, HFHH and the PM. It will take into account the five (5) processes of the planning process group, the plan schedule management he/she will also define activities, sequence activities, estimate activities durations and develop calendar as defined in the PMBOK sixth edition.

4.2.2. Plan Schedule management

This process consists of creating a plan to manage the project schedule; it describes the processes to be used to estimate, track, and report the project schedule. It is the guide the Project Manager and his/her team will use to estimate project activities and their duration, track project activities' durations and report on the project schedule. This plan also comprises how the team will review the project schedule and manage changes after the standard schedule has been approved.

This includes identifying, analyzing, documenting, prioritizing, approving, or rejecting, and publishing all schedule related changes.

4.2.3. Schedule Management Approach

The schedule will be developed through Microsoft Excel, which will allow the Project Manager to determine the periods during which the project activities will be carried out. Once approved by the sponsor, the schedule will be considered as the schedule baseline which will constitute a crucial tool that will allow the project manager and his/her team to monitor the progress of project activities, reduce delays, and the risks of schedule crashing, etc. Like many other project tools, the schedule may be subject to change, which will be done through proper change process, and will also be approved by the Change Control Board (CCB). Both lead and lags were used extensively in the course of developing the schedule of the collective shelter construction project.

4.2.4. Activities Definition, Sequence and Duration

A list of activities to be implemented under the project was developed from the project WBS. The list was used to do the sequence of activities to determine which activity comes next until the completion of the project. Expert judgement was used to determine the sequence and duration of activities. The list of activities also took into account the pure activities of the project management cycle including planning, implementation of activities, monitoring, and evaluation in order to ensure the completion of project activities.

Chart 11. Project Activities (Source: F. Gen, April 2018)

ID	WBS	Task Name	Description of Work	Duration	Predecessors

1	1.1	Project management	The management of the planning, execution, monitoring and controlling, and closure of the project.	180	
2	1.1.1	Planning	Planning and updating project activities throughout project lifecycle.	30 days	
3	1.1.2	Schedule management	Planning of project activities, assigning timeline and dates to determine, and control project duration.	150 days	
4	1.1.3	Financial management	Monitoring the financial expenditures of the project throughout the project lifecycle.	150 days	
5	1.1.4	Monitoring and control scope	Organizing project team meetings, documenting project activities, preparing reports and presenting to the appropriate stakeholders.	150 days	

6	1.2.	Procurement	The process to identify and select architectural and construction firms	150 days	
7	1.3.	Land Tenure security	Ensure land ownership.	5 days	
8	1.4.	Location Security & Safety Status	General security assessment of the area and region	2 days	7
9	1.4.1.	Location Security situation	Gangs' violence, political and community conflict dynamic assessment in the area,	1 day	
10	1.4.2.	Location Vulnerability to natural hazards	Disaster risks assessment of the location	1 day	
11	1.5	Location Accessibility status	General accessibility of the location	3 days	7

12	1.5.1.	Physical accessibility of the site	Assessment of the roads conditions (size, paved, bumpy, muddy etc.)	1 day	
13	1.5.2.	Roads conditions during rainy seasons	Accessibility assessment based on weather conditions	1 day	
14	1.5.3.	Basic services in the vicinity	Mapping of the basics services providers (Health care, education, electricity, water etc.) in the proximity of the site	1 day	
15	1.6.	Architecture & Design	Provide the technical specifications and drawings of the building that will guide the construction works	60 days	6,7,8,11
16	1.6.1.	Architectural drawings	This is the drawing of the building	10 days	
17	1.6.2.	Doors and Windows plan	The technical documents that provide details on the windows and doors of the building such as positions, size, distance, etc.	1 day	

18	1.6.3.	Roofing plan	It is a scaled drawing of the roof development providing detailed information on the roof structure, including shape, size, design and placement of all materials, ventilation, drainage,	2 days	
19	1.6.4.	Civil Work drawings	This is a technical document / drawing that provides detailed information about grading, sizing, and other site details. It gives a clear picture of all works that will be undertaken in the sites. It will be used for tender process to provide information to the bidding firms	30 days	
20	1.6.5	Structure drawing	a plan or set of plans and details for how a building or other structure will be built	3 days	

21	1.6.6.	Plumbing plan	Definition of the specifications and guideline for the works that will be undertaken in plumbing system of the building.	4 days	
22	1.6.7	Electrical plan	Definition of the specifications and guideline for the works that will be undertaken in electricity system of the building.	4 days	
23	1.7.	Construction	It consists of undertaking the construction of the different parts of the building,		15
24	1.7.1	Construction team	It consists of setting up ~~of~~ the construction team including carpenters, engineers, masons, electricians, plumbers and assign clear task to each member of the team.	8 days	

25	1.7.2.	Land and foundation	It refers to the works related to the preparation of the land, the implementation of design	5 days	
26	1.7.3.	Building Structure	construction of the building superstructure parts based on the drawings, plans and other technical details provided by the architectural team.	55 days	
27	1.7.4.	Mechanical, Electrical, and Plumbing	This is the implementation of the plumbing, electrical plans. It considers the installations of the wires, pipes, outlets, etc.	55 days	
28	1.7.5.	Doors and Windows	It refers to the installations of the doors and windows of the building	11 days	
29	1.7.6	Flooring	It consists of undertaking the works described in the plan and design to build the floor of the building.	14 days	

30	1.7.7.	Finish and Handover	The finishing works will consist of plastering, painting, lighting, etc. The handing over of the keys of ~~to~~ the building will be organized during a community ceremony.	23 days	23

4.2.5. Develop Schedule

This process consists of gathering and analyzing information related to activity sequences, activities durations, resources required and schedule constraint to create the project schedule. The schedule of the Shelter construction project has been developed through an excel spreadsheet. Details of the project schedule can be obtained in the table entitled **Emergency Shelter Construction Project Schedule.**

Chart 12. Emergency Shelter Construction Project Schedule (Sources: Construction of Community Hall, Project Implementation Works Schedule, Zarwu Zaizay, Aug 2018)

WBS	Activities	Start Date	End Date	Duration days	Jul 2022	Aug 2022	Sept 2022	Oct 2022	Nov 2022	Dec 2022
1.1	**Project management**	**1-Jul**	**31-Dec**	180						
1.1.1	Planning	**1-Jul**	**30-Jul**	30						
1.1.2	Schedule management	**1-Aug**	**1-Dec**	150						
1.1.3	Financial management	**1-Aug**	**1-Dec**	150						
1.1.4	Monitoring and control scope	**1-Aug**	**1-Dec**	150						
1.2	Procurement	**1-Jul**	**1-Dec**	180						
1.3.	**Land Tenure security**	**1-Jul**	**5-Jul**	5						

1.4.	**Location Security & Safety Status**	**1-Jul**	**1-Jul**							
1.4.1.	Location security situation	**1-Jul**	**1-Jul**	1						
1.4.2.	Location vulnerability to natural hazards	**1-Jul**	**1-Jul**	1						
1.5	**Location Accessibility status**	**1-Jul**	**1-Jul**							
1.5.1.	Physical accessibility of the site	**1-Jul**	**1-Jul**	1						
1.5.2.	Roads conditions during rainy seasons	**1-Jul**	**1-Jul**	1						
1.5.3.	Basic services in the vicinity	**1-Jul**	**1-Jul**	1						
1.6.	**Architecture & Design**									
1.6.1.	Architectural drawings	3-Jul	12-Jul	10						
1.6.2.	Doors and windows plan	12-Jul	12-Jul	1						

1.6.3.	Roofing plan			2						
1.6.4.	Civil work drawings	3-Jul	2-Aug	30						
1.6.5	Structure drawing	20-Jul	22-Jul	3						
1.6.6.	Plumbing plan	22-Jul	25-Jul	4						
1.6.7	Electrical plan	22-Jul	25-Jul	4						
1.7.	**Construction**									
1.7.1	Construction team	1-Jul	8-Jul	8						
1.7.2.	Land and foundation	3-Aug	7-Aug	5						
1.7.3.	Building Structure	8-Aug	1-Oct	55						
1.7.4.	Mechanical, electrical, and plumbing	8-Aug	12-Dec	55						

1.7.5.	Doors and windows	8-Aug	12-Dec	11						
1.7.6	Flooring	1-Nov	30-Nov	14						
1.7.7.	Finish and handover	2-Oct	31-Dec	23						

4.3. Cost Management Plan

4.3.1. Plan Cost Management

The Plan Cost Management process of the collective shelter construction project defines how the cost of the project is estimated, budgeted, monitored, and controlled. The Cost management plan is the only output of this process and is a subsidiary plan of the project management. It will constitute the guideline resource to which the project manager will refer to specify the accuracy of the cost estimate, to track the expenses while the project progresses in order to ensure that the costs remain within their allocated budget. The cost of the project will be estimated from a combination of tools including expert's judgement, parametric estimating which will consider the costs per square meter of construction on the local market, analogous estimating which is based on the cost incurred in similar other construction projects, and finally the bottoms up. The costs will be presented in a budget clearly defining the activities to be financed, the unit costs, the number of units, etc.; the budget will be developed through cost aggregation techniques and expert judgement. Project expenses will be tracked and controlled by the project manager supported by the finance team through a set of tools including the Sun 6 Accounting System variance analysis and earned value analysis. Finance will prepare monthly financial reports comparing cost baseline to actual performance. This information will allow the Manager to control the evolution of the different budget lines and to stay within the limits of the approved budget.

4.3.2. Activity Costs Estimate

In this process the cost of the activities has been estimated, which has allowed to determine the fund required to complete the project activities to achieve the objective. The estimation of the costs of the activities were based on the scope of the project mainly the WBS and the schedule to know exactly what activities will be undertaken and how long they will take to be completed. As described above, a combination of tools and techniques was used to estimate the costs of the activities. Experience Engineers (expert judgment) were contacted to collect

information about the current market prices in the construction including labor, cost of materials etc. They were contacted due to their well-considered view that takes account of the extent of scientific and other knowledge about previous experience.

In addition, analogous estimation was also used through collection of cost information from previous construction projects to estimate the costs. Furthermore, parametric estimation allows the project to gather standard information from the construction industry in Haiti to support the cost estimation. Currently in the construction industry in Haiti the cost per square meters for example is $300/sq. meter. Finally, the Bottom-up allowed the aggregation of the estimated cost. It involves the estimation of work at the lowest possible level of detail. These estimates were then aggregated in order to arrive at summary totals. By using detailed cost estimates for a work package has improved the accuracy of the estimates significantly. This combination of tools facilitated the development of BOQs on which the project team relied to develop the project budget. The template below named **Construction of Collective Emergency Shelter Bill of Quantity** will be used to collect the details cost of the project and develop the BOQ for the construction of the collective emergency shelter.

Chart 13. Construction of Collective Emergency Shelter _Bill of Quantity

No	Description	Unit	Quantity	Unit cost (USD)	Total cost (USD)
	Bill Item No. 1				
1.00	**Preliminary Works**				
1.10					
	Sub-Total				**$ -**

	Bill Item No 2	-	-	-	-
2.00	**Foundation and Earth Works Excavation**				
2.10					
	Sub-Total				**$ -**
	Total				**$ -**

4.3.3. Determine Project Budget

The determination of the budget is the process, which made it possible to estimate the financing required to achieve the objectives of the project. A set of tools and techniques were combined to elaborate the budget. The cost aggregation was associated with the funding limit reconciliation, and the expert judgment to determine the budget. Moreover, the budget preparation process was also based on a set of outputs developed under both the scope and schedule management. The activities as the smallest unit of the WBS and for which the costs had been estimated were added up in Work packages, which gave the cost of Work Package, which, in turn, were grouped into a control account. Then all the control accounts are added up to give the project cost. As risks, from both internal and external sources, are inherent to project management and implementation, reserves have been considered to address the risk if they are materialized. Two types of reserves were used as contingency and management reserves. The contingency reserves, as mentioned above, are used for addressing risks in the risk register that are materialized. This funding cannot be used for change requests, neither project closing events or else. While management reserve is part of the overall project budget, it can be used only for risks that were not identified in

the risk register. The contingency reserves will be released or used by the project team when a risk is materialized. The approval of the management will be required to access the management reserve. Thus, the project cost added to contingency reserves, which is 5% of the total budget, gave the cost baseline. The Cost baseline added to management reserve, which is 5% of the total budget, gives the budget. The project budget is presented in the table below.

Chart 14. Collective Shelter Construction Project Budget

No	Description	Cost
1	Total Bill Items Cost	$ 230,327.00
2	Transportation Cost (5%)	$ 11,516.35
3	Labor Cost (15%)	$ 34,549.05
4	Contingency reserve (5%)	$ 11,516.35
5	Management reserve (5%)	$ 575.82
6	Project and Overhead (5%)	$ 11,516.35
	Total budget	$ 300,000.92

4.3.4. Control Cost

The Cost control is one of the most important processes in project management to ensure the proper completion of the construction of the Collective Shelter project. It will allow the Project Manager to have control over the use of financial resources allocated to the project, to guarantee compliance with the various budget lines and

to facilitate justification and implementation of changes in the cost baseline or budget. The project team will measure cost variances from the baseline and taking appropriate action, such as increasing the budget allocated or reducing the scope of work to correct that gap. The Cost control is a continuous process that will be done throughout the project lifecycle.

The Project Manager will certainly be responsible for managing the project budget; however, the organization's accounting or finance support team will accompany him/her through provision of reliable information on the evolution of expenses and use of the budget. The accounting team will also use an accounting system or Excel spreadsheet applications which will facilitate the creation of a budget allocation model that will be updated monthly to generate accurate budget versus actual variance analysis. This information will be analyzed by the PM so that corrective measures can be taken including changes in cost baseline or budget. The **Collective Shelter Construction _ BVA Budget Variance Analysis** table below will be used to present the variance analysis.

Chart 15. Collective Shelter Construction _ BVA Budget Variance Analysis (Source : https://www.wallstreetprep.com/knowledge/budget-actual-variance-analysis-fpa/)

All figures in dollars		Month <year>					
WBS	Budget Description	Approved Budget	Budget to date	Actual to date	Variance to date	Variance %	Utilization %
1.1							
1.1.2							

	TOTAL EXPENDITURE						

The variance analysis will also be supported by the Cost Performance Index which considers the combination of the work performance data and work performance information to the budget burn rate. This will allow the PM to be able to make the comparison between the work accomplished and the level of use of the budget. If the budget is used up to 50%, then only 20% of the work is done, in which case there will be a big challenge for the PM to catch up or operate the necessary changes. The **Monthly Field report** below will provide detailed information that will be used by the project to conduct the cost performance analysis.

Chart 16. Monthly Field report, Month <Year >

WBS / Activity	Actual % complete	Incurred cost
1.1		
1.1.1		

Any increase in the authorized project budget, or changes over 20% in a specific budget line will be managed and approved through the performed integrated change control process and should be approved by the project manager and the sponsor.

4.4. Quality Management Plan

4.4.1. Plan Quality Management

The Quality of the Emergency Shelter Construction project is defined as the degree to which the project and its end result meet the requirements defined by the end consumers, particularly the DGPC and Habitat For Humanity, under the scope statement. Thus, quality will be every team member responsibility. The quality

management will ensure the achievement of the goals (Quality), it will guaranty that the deliverables are fit for purpose for what has been intended or for providing the DGPC and Habitat For Humanity with exactly what they have expected from the project. The Quality management processes will help to control the cost of the project, establish standards, and determine the steps to achieving and confirming those standards. Effective quality management of the project will also lower the risk of failure or unsatisfied unhappy clients.

Plan Quality Management provides guidance and direction on how quality will be managed and verified throughout the project lifecycle. It defines quality standards or requirements for the project and its deliverables and documenting how the project will demonstrate compliance with quality requirements and/or standards.

a. Quality standards that will be used by the project:

The quality standards of the Emergency Shelter Construction gather the requirements, specifications, guidelines, or characteristics defined by the key stakeholders, and that will be used by the projects team to ensure that building and processes are fit for their purpose. The table below (Metrics and Quality baseline) provides details on the quality standards that the project team will refer to in order to ensure that the project outcome and results will meet the intended requirements.

Chart 17. Metrics and Quality baseline

Quality Objective	Metric	Metric definition	Expected outcome/result	Measurement frequency	Responsible
	Land tenure security	Availability of land title,	The land belongs to the state, or a private owner donate it for the construction of	Once in the Initiating phase of the project.	M&E manager & Project manager

			the emergency shelter		
	Site security and safety status	History of gangs' attacks in the areas	The location has not been a victim of gang attacks for the last three years	Monthly	M&E manager, PM
		History of floods in the areas	The location didn't experience any floods for the past 10 years	Once in ~~at~~ the Initiating phase of the project.	M&E manager
Construction of an emergency shelter in the commune of Beaumont	Site accessibility status	Roads leading to the site are accessible by vehicles throughout the year	Vehicles can access the sites with no difficulties all year long including during the rainy season	Monthly	PM, M&E manager
		# of accidents occurred due to poor road conditions	No more than 1 accident occurred in the last three years due to poor road conditions	Monthly	PM, M&E manager

		Distance of the site to basic services providers (Health care, electricity, water, markets etc.)	The site is located less than 3 km from the main service ~~services~~ providers	Once in the Initiating phase of the project.	PM, M&E manager
	Architecture and design and construction	Building Size	The building size should not be smaller than 500m2,	Monthly	Sponsor, PM, M&E team, and project technical team,
		Space Distribution	The building separates living units to communal areas and other services	Monthly	Sponsor, PM, M&E team, and project technical team,
		Accessibility for people living with disabilities	Building is equipped with ramps and other facilities allowing people living with disabilities to use all services	Monthly	Sponsor, PM, M&E team, and project technical team,
		Ceiling materials and	Ceiling is made of hard board at	Monthly	Sponsor, PM, M&E

		height	minimum (10 mm) thickness and high enough for heat control and ventilation		team, and project technical team,
		Roofing resistance	The roofing is covered with 28 gauge roofing sheets.	Monthly	Sponsor, PM, M&E team, and project technical team,
			The roofing sheet shall be installed giving 6" minimum end laps and 2 corrugations side lap	Monthly	Sponsor, PM, M&E team, and project technical team,
		Power generation and electrical supply systems	25 Solar Street Lights of 50W 18V LED are installed in the compound	Monthly	Sponsor, PM, M&E team, and project technical team,
			The switches are enclosed weather prove	Monthly	Sponsor, PM, M&E team, and

			type of 5 amps,		project technical team,
			All 250V receptacles are 3 wire three pole 15 amps flush mounted	Monthly	Sponsor, PM, M&E team, and project technical team,
			The electrical services and equipment are fully installed	Monthly	Sponsor, PM, M&E team, and project technical team,
		Doors and Windows size, materials and installations	doors are 7'-2" X 6'-4". Hardwood panel doors: straight and square.	Monthly	Sponsor, PM, M&E team, and project technical team,
			The doors have louvers at top to allow ~~for~~ cross ventilation	Monthly	Sponsor, PM, M&E team, and project technical team,

			The Windows are 4'-4" X 3'-4 jalousie metal frame,	Monthly	Sponsor, PM, M&E team, and project technical team,
		Water and plumbing systems	All tubing are fixed at least 25 mm clear of adjacent surfaces	Monthly	Sponsor, PM, M&E team, and project technical team,
			The building is connected to realistic opportunity to connect to water supply	Monthly	Sponsor, PM, M&E team, and project technical team,
			The building has water reserve cistern for 25 liters per person per day	Monthly	Sponsor, PM, M&E team, and project technical team,
			Building is equipped with Solar panel heater for hot	Monthly	Sponsor, PM, M&E team, and project

			water.		technical team,
		Sanitary facilities and services	The W.C pans are fixed to the floor with chromium plated screws, and pointed with White mortar.	Monthly	Sponsor, PM, M&E team, and project technical team,
			At least one toilet per 10 people is accessible 24/7	Monthly	Sponsor, PM, M&E team, and project technical team,
			The building is equipped with sewage and solid waste disposal systems	Monthly	Sponsor, PM, M&E team, and project technical team,
			All restrooms are fitted with handicapped enable bars and handle to aid use.	Monthly	Sponsor, PM, M&E team, and project technical team,

			All wash hand basins are securely fixed to the walls.	Monthly	Sponsor, PM, M&E team, and project technical team,
			All faucet fitted on wash hand basin are handicap accessible.	Monthly	Sponsor, PM, M&E team, and project technical team,
Cost / Budget management	Cost variance	Cost variance (CV), also known as budget variance, is the difference between the actual cost and the budgeted cost, or what you expected to spend versus what you actually spent. This formula helps project manager to figure out if they are over or under budget	The overruns and under-uses at the level of the budget lines cannot exceed 20%	Monthly	Finance team and PM
Schedule	Schedule	Schedule variance indicates whether a	All the project activities should	Monthly	PM, M&E team, and

management	variance	project schedule is ahead or behind	be implemented in time		project technical team

b. Roles and Responsibilities (related to quality activities).

As mentioned below, quality management remains the responsibility of each member of the team, however the contribution of the team members in quality assurance depends on the roles, the position, the status of the members of the team. The table below (**Roles and Responsibilities Chart**) details the contribution of team members in quality management.

Chart 18. Roles and Responsibilities (related to quality activities)

Role	Responsibilities
Sponsor (DGPC, Habitat For Humanity)	• Provide clear and concise requirements to support a well-defined scope and assumptions and avoid ambiguity. Provide feedback on the project deliverables and approved necessary changes to ensure the achievements of project objectives.
Project Manager	• Leading Project Implementation including keeping Schedule and cost on track, providing necessary Support to the Project team, ensure interaction with the main stakeholders DGPC, Habitat For Humanity , ensure official sign off on Project deliverables and other documents, leading root cause analysis

	of project challenges.
Project technical team	• Respect project schedule and budget (cost), ensure proper supervision of the construction works, monitoring and control, and ultimately guarantee the delivery of stakeholders requirements
Project Monitoring and Evaluation team	• Identify the indicators and metrics - Calculate program baseline and end line -Measure the metrics - Identify defects, mistakes in the design and construction process and communicate to PM Product progress report on metrics and make recommendations -Calculate schedule variance
Project Procurement team	• Respect the project procurement plan and procedures, purchase construction materials, labor and other services and equipment in a timely manner - Conduct the purchasing according to predefined specificities,
Project Finance team	• Ensure proper tracking of expenses – use of budget - Producing quality financial report - Calculate the Cost variance
External Auditors	• Periodically verify the strict application of project predefined processes and

	procedures, and identify gap and make recommendations.
Consultants	• Collecting information from stakeholders - Writing report – Produce adequate design and construction according to local and international construction code and collective shelter standards.

4.4.2. Manage Quality

Managing quality consists in implementing the quality management plan, executed within the framework of the project in order to ensure that the results of the project meet the requirements of the stakeholders. The table (**Quality Activities Matrix)** below details all the quality management activities that will be implemented as part of the emergency shelter construction project in the municipality of Beaumont

Chart 19. Quality Activities Matrix

Deliverable	Requirement	Manage activities	Frequency	Responsible
Construction of an emergency shelter in the commune of Beaumont	Site tenure security	Manage: 1. Gathering and analyzing data related to land tenure situation – occupation rights – donation certificate- Government authorization 2. Producing reports on	Once: Initiating and planning phase	M&E, PM and project technical team

		information collected, project progress and challenges. 3. Updating project documents 4. Updating project management plan		
	Site security and safety status	1. Gathering and analyzing data related to history of gang activities and natural disasters situation – 2. Producing reports on information collected, project progress and challenges. 3. Updating project documents 4. Updating project management plan	Monthly basis	M&E, PM and project technical team
	Site accessibility status	1. Gathering and analyzing data related to history of accident on the	Monthly basis	M&E, PM and project technical

		roads leading to the site – Site accessibility ~~during~~ throughout the year including during the rainy season – mapping of nearby basic services providers 2. Producing reports on information collected, project progress and challenges. 3. Updating project documents 4. Updating project management plan		team
	Architecture and design, and construction	1. Collecting and analyzing data related to the building design – the construction works 2. Producing reports on information collected, project progress and	Monthly basis	M&E, PM and project technical team

		challenges. 3. Updating project documents 4. Document change request 4. Updating project management plan		
	Cost management	1. Collecting and analyzing data related to the expenses – procedures- 2. Producing financial reports. 3. Updating project documents 4. Document change request 4. Updating project management plan	Monthly basis	M&E, PM and project technical team
	Schedule management	1. Collecting and analyzing data related to the project activities implementation – timely procurement – project	Monthly basis	M&E, PM and project technical team

		achievements or realizations 2. Producing project progress reports and challenges. 3. Updating project documents 4. Document change request 4. Updating project management plan		

4.4.3. Control quality

Control quality consists of monitoring and regarding results of executing the quality management activities in order to assess performance and ensure the project outputs are completed. It is a crucial process ~~for~~ in project management as it ensures that project activities and results remain within the scope of the project planning, and keep the customers and other stakeholders satisfied. As mentioned above, as part of the emergency shelter construction project, control quality is the responsibility of the entire project team, however certain members of the team will have specific responsibilities. The table below details the role and responsibility of team members in monitoring quality.

Chart 20. Role and responsibilities

Deliverable	Requirement	Quality Control activities	Frequency	Responsible

Construction of an emergency shelter in the commune of Beaumont	Site tenure security	- filling check lists related to land tenure security requirements	Monthly basis	M&E, PM and project technical team
	Site security and safety status	Site visit- organizing meetings- focus group discussions -	Monthly basis	M&E, PM and project technical team
	Site accessibility status	Site visit- organizing meetings- focus group discussions -	Monthly basis	M&E, PM and project technical team

	Architecture and design, and construction	- organizing meetings- filling check lists related to design and construction requirements - Conduct performance review – conduct testing of the building plumbing and electrical systems - Conduct Roots cause and analysis updated the issues log .	Monthly basis	M&E, PM and project technical team

4.4.4. Quality Management Tools

The project will use a combination of tools including templates, diagrams, control sheets, check lists and forms to manage the project quality.

a. Checklist

The project manager and the project team will use check list to monitor and control the adequacy of the construction or parts of the construction to the requirements of the stakeholders.

Chart 21. Quality monitoring Checklist template (Source: https://www.wallstreetmojo.com/checklist-in-excel/)

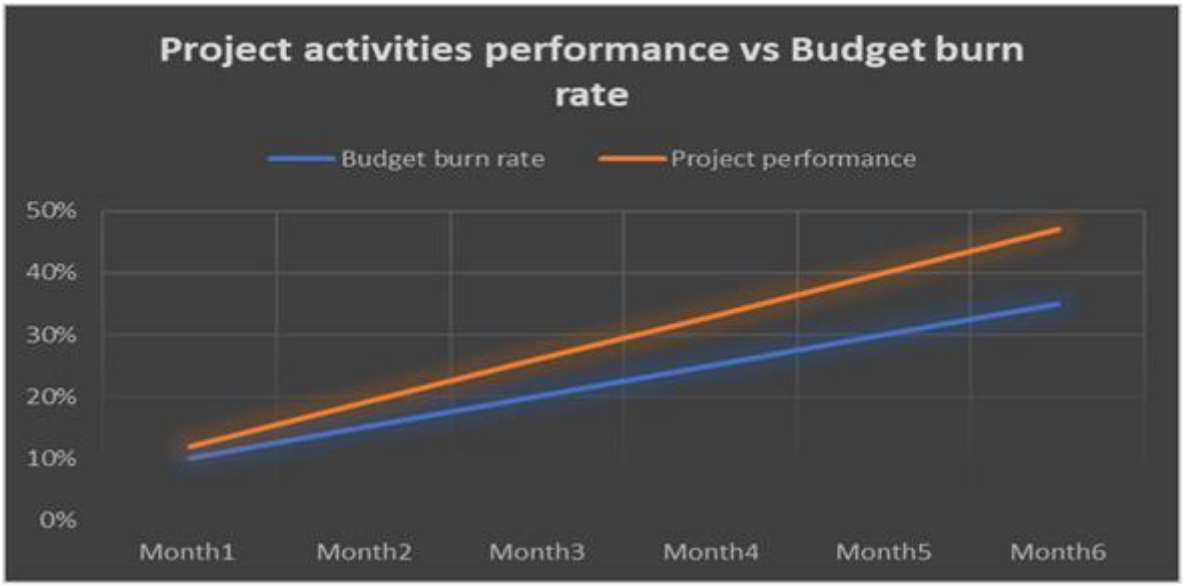
Code	Requirements	Status
1.1	Site safety and security	☐ Check
1.1.1	No gangs attacks for the last three years	☐ Check
1.1.2	No flood occurred for the last 5 years	☐ Check
……	…….	☐ Check

b. Cause and effect Diagram:

The project will use the cause-and-effect diagram to understand what the cause of the problem is exactly. The project team will list out all the categories of defect or problem identified, it could be 24 defects grouped under 6 categories of defects. Then the team will list out all of the possible causes of the defect or problems for each category. Then they will fix the defects to avoid facing them in the future.

c. Graphs

The graph will be used by the project team to represent the information related to



4.5. Resource Management Plan

Project Resource Management includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project (Project Management Body of Knowledge, 6th Edition). Resource management is one of the most important aspects of the planning and management of the construction project of the collective emergency shelter of the municipalilty of Beaumont. It will make it possible to identify and acquire the appropriate resources and to make them available at the places and at the times when they are really needed in order to achieve the project objectives, delays and to avoid the risk of re-work on the results achieved. The identification, acquisition, management of the resources to be mobilized for the realization of the construction project of the collective shelter in the municipality of Beaumont were made according to appropriate project management procedures and best techniques. They were carried out in a transparent process involving the DGPC, Habitat For Humanity, representatives of the town hall, etc.

4.5.1. Plan Resource Management

The Resources Management Plan developed and defined the procedures and processes to estimate, acquire, manage, and use both the team as well as physical resources. It identified a set of procedures, tools and practices that constitute the guidelines to estimate, acquire, manage, and use the resources.

4.5.2. Estimate Activity Resources Process

Resource estimation is an essential process for the success of the project because it allows the project team to mobilize the necessary resources, in quantity and quality, for the implementation of activities that can lead to the materialization of the project objectives. Several complementary tools and techniques were combined to estimate resources for Emergency Shelter construction Project. The table below summarized the tools and techniques used to estimate the activity resources

Chart 22. Estimate Resources, tools and techniques

Estimate Resources, tools ~~tolos~~ and techniques	
Expert judgement	Civil protection experts working for the DGPC, Engineers, Architects who are familiar with the construction process and management of emergency shelter were consulted to estimate the resources required for the successful completion of the Project.
Bottom-up	The project team developed BOQs based on unit basic quantities and prices. Human resources estimate was conducted through meetings with stakeholders and based on case load per project team
Meetings	Resources were also defined through meeting with stakeholders, project team and cross functional department staff
Analogous	The estimates were based on past experiences with other construction projects. This allowed the PM to determine the duration (time), staff allocation for each activity and financial resources necessary.

This process has enabled the project to develop a set of documents or sub-plans crucial to the effective management of the necessary resources and will serve as guidelines for mobilizing and acquiring the appropriate resources when and where needed by the project.

Procurement Plan : The project developed a procurement plan which details the project purchase needs and timeframe to allow timely implementation of project activities.

HR plan: The HR plan defines the profiles that the project will need, the number and when they are needed.

Project organigram: The project organigram defines the reporting lines.

4.5.3. Acquire Resources Process

This process is the third one of the project resource management Knowledge Area that will be used by the Emergency Shelter Construction Project to collect the various human resources, facilities, tools and equipment, supplies and raw materials required to deliver the Project. the acquisition of resources will be made through the combination of a set of tools and techniques, procedures clearly defined in the various manuals of procedures (Procurement manual, manual of human resources, Habitat For Humanity and The DGPC). The procedures which will be used will be approved by the management of the two institutions carrying the project. The role of the project manager will be to ensure the strict application and respect of these procedures by the various members of the team.

4.5.3.1. Human resources acquisition

Human resources will be acquired within and outside of the both organizations caring the project, Habitat For Humanity and DGPC, through Pre-assignment from other projects and recruitment. The process will be managed by the HR department in coordination with the Project Manager.

Pre-assignment from other projects: HFH and DGPC will assign some of their existing employees to the project and cross-functional staff to support its implementation. Staff members with appropriate profiles from the infrastructures department (mainly engineers), Community engagement department, Procurement department and Finance department will be transferred from other projects to complete the project team. The Project Manager and the management of HFH and DGPC management (sponsors) will agree on which team members will be allocated to the Project.

Acquire resources from outside the organizations: Open recruitment: Additional employees will be recruited through opened recruitment process, which will include advertisements, written test and interview. The technical skills, experiences, interpersonal skills, and costs/salary are the key factors considered during the recruitment process. The Project Manager in coordination with the Project Sponsors approve the salary level that Will be given to the team members based ~~base~~ on the salary scale of HFH.

4.5.3.2. Services and building materials acquisition:

The Project will require services and construction materials from external suppliers particularly from Architecture firms, construction firms, construction building materials and construction skilled labors/technicians. The selection suppliers will be handled by the Procurement team in coordination with the Project manager. The Project Manager and the sponsors will develop terms of references that will specify the requirements of the Project, and which will be the basis for the tender process.

Hiring of consultants: The design and supervision of the construction of the emergency shelter will be ensured by two external firms, one Architecture firm and one construction firm. The consulting firms will be recruited through open calls for tenders, inviting construction and Architecture firms with expertise in the design and supervision of building construction works to bid for the contract. The relationship between the Project and the firms will be formalized through service

contracts which provide details regarding the responsibilities of each of the two parties, payment, scope of services, amendment, termination, liability insurance, confidentiality, IP ownership, and choice of law/dispute resolution.

Individual contractors: local technicians such as masons, carpenters, painters, plumbers, and electricians will be recruited through open recruitment process, test and interview. These recruiting procedures will also be combined with recommendations from the other construction firms, community members, local authorities etc. The technicians will be linked to the Project through a service contract clarifying the commitments of both parties.

Acquisition of materials: The project will acquire the building materials (iron bar, cement, sand, wood, gravel, electric system, doors, slats, etc.) and equipment (materials electrics, air conditioning, fan, etc.). The materials will be acquired through open national tender or bidding process in which the Procurement team will share the request for tenders (RFT) that will be jointly developed by the Project Manager and the Procurement Team, with suppliers expressing interest to bid for the tender. Experience capacity to deliver quality materials, availability of materials and cost will be the key factors that will be used to select the suppliers.

4.5.4. Develop Team Process

As stipulated in the schedule management, the duration of the project will not extend beyond six months, which will not leave enough time to develop the team properly. However, the project will undertake a set of activities that will bring the team up to speed, track the performance of team members, provide feedback on performance, but also provide opportunity for team members team to share their concerns with the Manager, or provide explanations on the quality of their work.

Individual team assessment and Performance review: At the start of the project, the management of HFHH and the DGPC, and the project manager will ensure that all team members have well-defined objectives with objectively verifiable indicators. These indicators will allow supervisors to objectively measure the

performance of team members. The whole team will have its goals established. Every quarter the supervisors and their supervisees will sit down to discuss their performance and provide feedback to improve performance. Based on the results of the performance review, the human resources department will develop a training plan which will be approved by the sponsors and the Project Manager. The project will support the team through formal training that will take place in professional training centers, for example training in AutoCAD, Excel, or Microsoft Word. Other team members will be coached, and others will be trained on the job (on the job training).

Virtual team tool and meetings: Given the physical distance between the municipality of Beaumont, the project implementation area, and the offices of HFH and the DGPC, the project will also make use of virtual team tools. The PM will set up a WhatsApp group that will be used to send instructions, discuss challenges, and share solutions. Zoom will be constantly used to conduct meetings' resources use, Budget burn rate, project matters, design, and progress updates. Reports, requests, photos, etc. will also be shared through emails.

4.5.5. Manage Team Process

The management of the team will be done according to Haitian labor code to ensure that the team performed well. The State's labor law provides guidance on the rights and duty of the employees. It considers insurance, leave, conditions for termination of contracts, etc. Its team management will also be supported by the HFH HR policies & manual that will describe the working conditions, requirements, and the duty of the organization towards the teams. It provides a set of templates (timesheets, leave request, training plan, training report) to be used to monitor HR activities such as annual leave, sick leave, working hours, training requested etc.

As mentioned above, the team's performance will be measured through several tools. The performance revision is the most formal tool used to discuss the team's performance. In addition, PM leadership, negotiation, and conflict management skills of will allow The Manager to accompany the team, keep it motivated and

finish the project on time and within budget. The project final reports, both narrative and financial, will summarize the results of the team's work, the activities realized, the lessons learned, etc.

4.5.6. Control Resources Process

To meet the tight deadline and ensure that resources will be available at the time they will be needed for the Emergency Shelter construction Project, it is planned to develop a strong control system. The procurement department will ensure the timely purchase and delivery of materials and equipment needed, while the logistics department will handle the management of the inventories to ensure timely release of the materials (construction materials, equipment, etc.). The procurement team will refer to project budget, BOQs, agreements, inventories, and project procurement plan to ensure timely availability of the materials and equipment that the team will request be requested. These documents will be also used to address any shortage in materials in a timely manner. The logistics manual, templates, Goods Receive Notes (GRN), Goods Delivery Notes (GDN), Inventories, scorecard are some of the tools that HFH and DGPC will mobilize to formalize and control the use of the materials acquired by the team. Those tools also will facilitate the identification of discrepancies or shortage in materials that will be requested vs the materials that will be effectively used. The released of materials can only be approved by the Project manager. On a monthly basis the logistics and Procurement team will submit an inventory report to the Project manager.

Cost benefits and alternative analysis will be frequently used in the project implementation to find better and quicker solutions to meet the needs for materials and equipment of the project.

The project team, the PM, will use problem solving techniques to constantly address both internal and external issues that will emerge. Through the project's mid-term and final reports (narrative and financial), both Project action plan and

Budget will be updated. Lessons learned and recommendations for future projects, issues, and risks will also be documented in the final report of the project.

4.5.7. Project Organizational Chart / RACI Matrix

Having clear and precise job descriptions remains one of the factors that can better affect the performance of team members. In addition to allowing team members to know their roles and responsibilities, they allow employees to avoid creating confusions and conflicts within the team and increase the productivity of the team. The project will make use of the RACI matrix to formalize the roles and responsibilities of key team members. Any proposed changes to project responsibilities must be reviewed and approved by the Project Manager. Changes will be proposed in accordance with the project's change control process. As changes are made, all project documents will be updated and redistributed accordingly. The RACI matrix below provides details on roles and responsibilities of the key

Chart 23. RACI Matrix of the Emergency construction Shelter ((Source: F. Gen, April 2018)

	Project Manager	Lead Engineer	Field Engineers	Procurement Manager	M&E Manager	Communication Manager	HR Manager	Finance Manager
Requirements Gathering	A	R			I	I		
Change Requests	A	R	I	I	I	I		I
Design of the building	A	R	I	I	I	I		I
Construction works	A	R	I	I	I	I		I
Site Management	A		R		I	I		

Permits/ Approvals	A	R	C					
Project Scope	A	R	I	R			I	R
Project Communications	A	R	R			R		
Project Quality	A	R	R					
Stakeholder Management	A	I						
Accounting	A							R
Status Reports	A	R			R			
Manage Site	A		R					

Workers								
Procurements	A			R				

Key:

R – Responsible for completing the work

A – Accountable for ensuring task completion/sign off

C – Consulted before any decisions are made

I – Informed of when an action/decision has been made

4.6. Communications Management Plan

In this context of the prevalence of social media (Facebook, twitter, WhatsApp, etc.) rumors circulate extremely quick and can contribute to turning a community against any project. People easily lose confidence and can be more reluctant to engage and support the project activities. Thus, the project team particularly the Project Manager of the Emergency Collective Shelter Project will have to adopt a proactive communication throughout the implementation. The project will ensure that the needs for relevant information of the stakeholders are taking care of and in a timely manner. The communication plan will describe the procedures for communication planning, managing, and monitoring. The communication plan will be prepared jointly by the Communication Manager and the Project Manager. The sponsors will approve it to ensure that it meets their standards for communication.

4.6.1. Manage communication

The management of the project's communication will begin with the mapping of the stakeholders, to continue in the definition of their information needs, the means of transmission including emails, letters, visibility boards, phone calls, websites, zooms, teams, presentation, instant messages, In-person etc. This exercise will also determine the frequency of information, the persons responsible, the language to be used, the periods for sharing information. As part of the Emergency Shelter construction project, the main stakeholders will be HFH, DGPC, local authorities (mayors, Casec, Asec), community leaders (school directors, nurses, pastors, priests, etc.), Project Team and Project Manager. Each of these stakeholders is interested in a set of information. Communication management is the responsibility of whole project team, as each of them will have a certain level of information to share with a stakeholder. The communication matrix below details the needs and the different communication methods that the project team will use to get information to them in a timely manner.

Chart 24. Emergency Collective Shelter Construction _ Communication Matrix

Communication Type	Audience	Description/Purpose	Frequency	Owner	Channel
Project Kick off Meeting	Project Execution Team Key Stakeholders such as Sponsors (HFH and DGPC), relevant Government Ministries, Municipal Bodies, Community leaders etc.	Project Team Introduction, Review of Project Objectives, results, budget, schedule plan etc.	Once	Project Manager	Face to Face, Virtual meetings software (zoom, teams), Media, Press Conferences, Press Release
Project Announcements	Project Team	Reminders and Follow Up	Weekly	Project Manager	Face to Face and Virtual
Working Sessions	Project Execution Team	Project Documents Update, Designs, BOQs,	Monthly	Project Manager	Face to Face and/or Virtual (Zoom,

		assessments,			teams, google meet etc.)
Procurement and Logistical Meetings	Project team, HFH and DGPC support services (Procurement, Logistics, Human Resource Managers)	Project discussions in relation to materials to be purchased, transported, storage, challenges, security, etc.	Monthly	Project Executio n Team	Face to Face and/or Virtual
Project Validation Meetings	Project Manager, lead engineer, HFH and DGPC management team	Consulting in relation to the design of the building (validation of architectural design, electricity plans, plumbing plan).	Monthly	Project Executio n Team	Face to Face and/or Virtual
Progress reports	Project Manager, lead engineer, Communication Manager, Finance	Provide Project Updates	Monthly	Project Manager & Project Executio n Team	Email, phone and virtual

	Manager,				Face to Face or Virtual, Powerpoint presentation
Presentation	HFH and DGPC management team, Communication Manager	Provide Project Status Updates	Monthly	Project Manager & Project Execution Team	Face to Face or Virtual
Sensitization Meetings	Community members, local authorities	Project Objectives, Benefits, community participation	Quarterly or as necessary	Project Execution team & DGPC and HFH communication staff	Face to Face, Billboards, Media, Interviews, Telephone
Consultations	Community leaders, local authorities (mayors), HFH	Consultations required sites identification, assessment,	Once (at the start of the	Project Execution Team	Face to Face, Virtual, Email,

	and DGPC representatives	needs assessment for the collective shelter	project)		Telephone

4.6.2. Monitor communication

At this level, the PM and his team will ensure that the information needs of stakeholders are met. This will be done through a combined set of tools and techniques including meetings, observations, and conversations. During the presentations some stakeholders, mainly the sponsors (HFH, DGPC), will inform the team of additional information needs.

The communication plan which is the basis for the communication management will be a dynamic document that will be updated throughout the project implementation, as the need for information of the stakeholders will be changed while the project will be progressing. However, any of the changes in the plan will be done through proper change request and should be approved by the Project Manager. To effectively manage stakeholders' satisfaction the project will use an issue management log, anytime a stakeholder brings an issue the Project Manager will make it is registered in the issue log.

4.7. Risk Management Plan

4.7.1. Risk Management Introduction

A risk is any foreseeable or unforeseeable event that can have a certain influence on the performance, results, or the project. In fact, the unique nature of projects combined to a set of factors on which they do not have any control, make them inherently risky. Hence, the need to take risks into consideration throughout the different phases of the project cycle in order to minimize their impact on project performance or results, and to increase the probability of project success. Given the multitude of stakeholders, political and socio-economic uncertainties,

insecurity, the culture of corruption, the collective emergency shelter construction project will obviously be exposed to different categories of risks. Risk management will be the responsibility of all members of the project team, however the Manager, as guarantor of the proper implementation of the project and the achievement of the targeted objectives, will be the main person responsible for ensuring an integrated, proactive, systematic, and ongoing risk analysis to understand the risks to which the project is exposed, in order to manage them and consequently make strategic decisions contributing to the achievement of its objectives.

The project team will undertake project risk management. This includes identifying and managing individual project risks as well as overall project risks. As part of this process, a risk management plan will be formulated which will propose measures to manage and mitigate identified risks at an acceptable level. In determining measures in the construction and execution phases, it will be important to consider the risks of the project as well as the probability of these risks to occur.

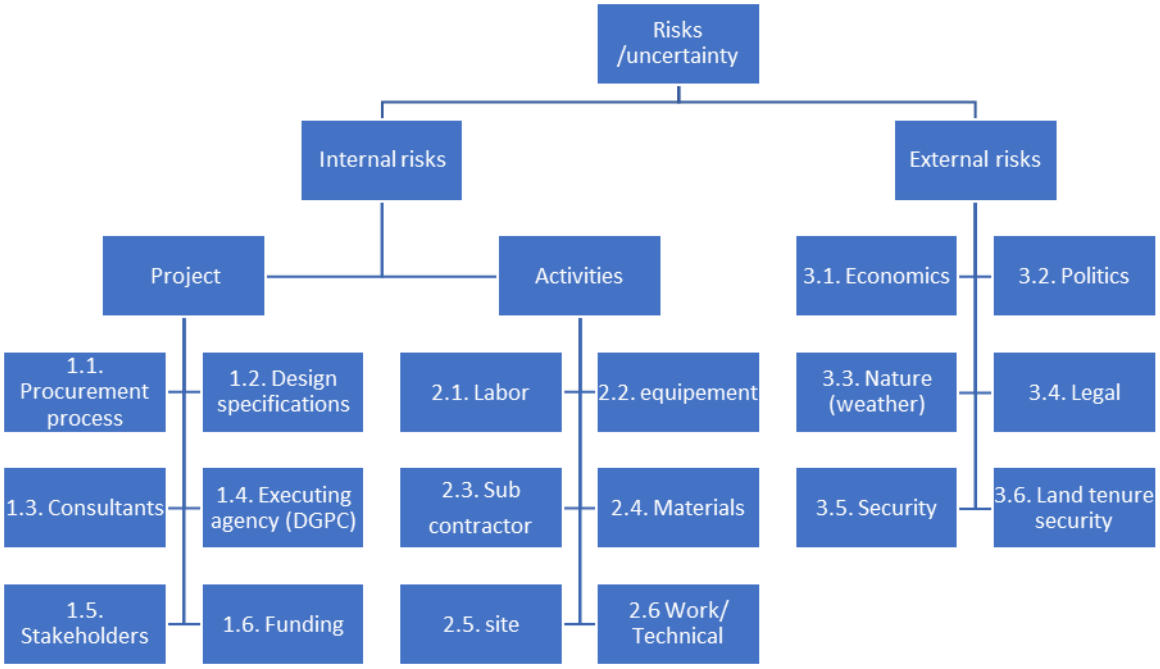
4.7.2. Risk Identification

Like any other project, the collective emergency shelter construction project identified a set of risks to which it will be exposed to, and which will have the potential to affect the project outcomes. The risks have been identified through lessons learned from past projects executed by HFH and DGPC, Meetings with the mayors of the municipality of Beaumont, representatives of HFH and the DGPC, families living in the commune of Beaumont etc. Judgement expert was used to gather risks related information from engineers working in the construction sector in Haiti. The risks included individual project risk, integral project risk, internal risks (funding, mismanagement, procurement, fraud, etc.) and external risks (economics, politics, regulations/law, nature/natural disasters). The followings are some of the risks identified through the combination of the above tools and techniques: material deficiencies, change in available materials on the market, inflation, variation in prices, labor costs, unforeseen site conditions (geotechnics, archaeology, etc.), unfavorable meteorology (rains, floods, etc.), changes in legislation, rules, deadlines for obtaining authorizations / signatures, bureaucracy,

funding problem, design faulty technical design, execution incompetence, mistakes, and unsuitable equipment/techniques/methods, lack of qualified personnel, ~~execution~~ lack of leadership/oversight, late information etc.

Since the risks will potentially continue to emerge through the implementation of the project, the identification process will continue until the closure of the project. The Risks were identified and categorized using a Risk Breakdown Structure (RBS) and Risk Probability and Impact levels were defined based on HFH and DGPC, and other stakeholders' risk appetite and threshold.

Figure 38. Risk breakdown structure



4.7.3. Risk Analysis

Probability and Impact Scales

The identified risk and its probability of occurrence were also captured in a probability and impact matrix. The analysis also considered the impact of the risks on the project's objectives if they occur. The identified risks will be further detailed

in a risk register that will take into consideration, but will not be limited to identified risk, cause, risk owner and strategy.

Chart 25. Definition of Probability and Impact Scale

Scale/Project Objectives	Very Low (0.05)	Low (0.10)	Moderate (0.20)	High (0.40)	Very high (0.80)
Cost	Insignificant cost increase	$ 30,000	$ 30000 - 60 000	$ 60000 - 120 000	> $ 240000
Schedule	Insignificant time increase	< 2,5 days	2,5 - 5 days	5 - 7 days	> 7 days
Scope	Insignificant scope reduction	Small areas of scope affected	Considerable areas of scope affected	Complete areas of scope affected	Project is no longer feasible
Quality	Unnoticeable quality reduction	Minor quality reduction	Quality reduction required HFH and DGPC approval	Quality reduction unacceptable to sponsor	Project is no longer feasible

Chart 26. Probability and Impact Scale

Rating	Score	Definition
Very Low	0.1	A very minute of occurring
Low	0.3	Unlikely to occur
Moderate	0.5	It may occur during the project
High	0.7	Very likely to occur
Very high	0.9	Almost occurring

P x I Scale

Risks	Probability	Impact	Risk Score	Risk rank with the project
1.1. Procurement process (delays in procurement process, fraud)	0.50	0.80	0.40	0.7
1.2. Design specifications	0.20	0.80	0.16	0.5

1.3. Consultants	0.10	0.60	0.06	0.3
1.4. Executing agency (DGPC)	0.50	0.80	0.40	0.7
1.5. Stakeholders	0.50	0.80	0.40	0.7
1.6. Funding (Insufficient)	0.60	0.80	0.48	0.7
2.1. Labor (poor quality)	0.30	0.80	0.24	0.5
2.2. equipment (Poor or Unavailable Unavailable)	0.40	0.60	0.24	0.5
2.3. Sub-contractor (Incompetent)	0.05	0.80	0.04	0.1
2.4. Materials (Poor or Unavailable)	0.60	0.80	0.48	0.7
2.5. site (flooded site)	0.05	0.80	0.04	0.1

2.6. Work/Technical (poor quality)	0.10	0.80	0.08	0.1
3.1. Economics (inflation)	0.60	0.80	0.48	0.7
3.2. Politics(Change in leadership)	0.50	0.80	0.40	0.7
3.3 Nature / (weather)	0.50	0,30	0.15	0.7
3.4. Legal	0.05	0.80	0.04	0.1
3.5 Security	0.40	0.30	0.12	0.3
3.6. Land tenure security	0.60	0.80	0.48	0.7
Total Risk Score			4.69	

1.1.1.1.1 Probability and Impact Matrix

The risks, to which the project will be exposed to, will be prioritized according to their probability of occurrence and their impact on the activities, results of the

project or the project, as a whole. This analysis will be based on the probability and impact matrix that gives the opportunity to combine the probability of occurrence to risk to the impact score of the risk on the project. The project manager and his team will multiply the probability of materialization of each reach by the impact of this risk on the project, the result will allow the Project Manager and the team to know whether the risk needs special attention, a mitigation plan or if it is sufficient to only monitor it. The probability and impact matrix below gives a fairly explicit picture of the categorization of the risks to which the project is. The risks for which the "probability and impact" analysis gives values found in the section in red (top and right), are risks to which the project team will have to give a lot of importance, because not only their probabilities are high, their impacts on the project are also considerable. The values in the green section are less important, the project will follow them because even the probability of manifestation of one of these risks is high, its impact will be low. The probability and Impact Matrix is as follows:

Chart 27. Probability and Impact Matrix

Likelihood	Threats				
FREQUENT (0,90)	0.05	0.09	0.18	0.36	0.72
LIKELY (0.70)	0.04	0.07	0.14	0.28	0.56
POSSIBLE (0.50)	0.03	0.05	0.1	0.2	0.4
UNLIKELY (0.30)	0.02	0.03	0.06	0.12	0.24

RARE(0.10)	0.01	0.01	0.02	0.04	0.08
	VERY LOW (0,05)	**LOW (0,10)**	**MODERATE (0.20)**	**HIGH (0.40)**	**VERY HIGH (0.80)**

Chart 28. Risks register

RBS Code	Cause	Risk	Consequence	Probability	Impact	PXI	Trigger	Owner	Strategy
1.1	Lack of suppliers capacity to meet the tender process requirement.	Procurement process (delays in procurement process,	Schedule delays.	0.5	0.8	0.4	Suppliers do not submit offer to tender process due to lacking of bidding experiences (Limited knowledge on legal and administrative documents to submit).	Procurement manager	Organize information sessions for suppliers. Follow up (Invite) with suppliers to Bid. Start tender process early .

	Lack of the transparency in the procurement process/ in selecting suppliers	Misuse of funding and fraud/ nepotism/ over-invoicing of a good or service higher than its actual cost, with fraudulent intent	Project overrun cost	0.5	0.8	0.4	Disproportionality between budget burn rate and works achieved	Project Manager and Procurement Manager	Put in place finance and accounting system including internal control , Organize transparent tender process, conduct regular and spot internal control, conduct regular and spot site visit,
1.2	Architecture firm deliver to PM and sponsor completing the entire building design	Design specifications do not meet Sponsors and other stakeholders requirements	Delay in tool design development/ rework / Schedule delays/	0.20	0.80	0.16	Lack of clarification in the consultant TOR and contract	Project Manager	Revise TOR _ Introduce delivery by sequence/ iteration

1.4	DGPC as a state entity tries ~~try~~ to use the project for government propaganda	Executing agency (DGPC)	Generate resistance from the community / Schedule delays.	0.50	0.80	0.40	Community members blocks project activities	Project Manager	Organize regular project meeting – set up communication plan to regularly ~~regular~~ inform the community and set up a complaint mechanism system/hotline.
1.5	Stakeholders trying to influence the construction works despite the approved design	.stakeholders request to change the plan in the middle of the project	Increased time spent trying to convince the stakeholders/ delays schedule	0.50	0.80	0.40	Stakeholders constantly request for changes	Project Manager	Ensure stakeholders participation in kickoff meetings and iteration approval sessions – keeping key stakeholders on project progress

1.6	Project cost underestimate	Project funding insufficient to undertake the works	Reduction in quality of work.	0.60	0.80	0.48	The budget burn rate is not proportional to the project activities realized	Project Manager Finance Manager	Ensure BOQs and prices are estimated ~~done~~ based on real market prices. All project cost are taken into consideration in the budget. Ensure tighter cash flow management.
2.1	Lack of transparency in labor recruitment / Nepotism	Labor (poor quality)	Reduction in quality of work/ Delays in schedule/ increase of project overrun cost	0.30	0.80	0.24	Labor do not produce the quality expected	Lead Engineers and field engineers	Revise JDs, recruitment process, introduce test in the recruitment process

2.2	Equipment is not performing as expected	equipment (Poor or Unavailable)	Reduction in quality of work/ Delays in schedule/ increase of project overrun cost	0.40	0.60	0.24	equipment do not have the expected productivity	Lead Engineers and Procurement Manager	Acquire written agreements from project sponsor outlining their commitment(s) to the project.
2.4	Suppliers do not have in stock the materials offered in the bidding process	Materials (Poor or Unavailable)	Reduction in quality of work/ Delays in schedule/ increase of project overrun cost	0.60	0.80	0.48	Materials delivered does not meet specs ordered	Project Manager/ Procurement Manager	Ensure specifications are clearly defined in the TORs, visit the storage of the suppliers during tender process, require a sample of the materials, as part of tender requirements

3.1	Sudden increase of the prices of the materials and labor on the market	Economics (inflation)	Reduction in quality of work	0.60	0.80	0.48	Project running out of liquidity to support project activities	Project Manager/ Finance Manager	Ensure that budget has contingency and management reserves , Looking for additional sources of funding,
3.2.	Central government changes the Mayors or DGPC leadership	Politics (Change in leadership)	Delays in schedules and costs increase	0.50	0.80	0.40	New leadership request changes in project and priorities	Project manager	Engage DGPC technician in the process, do project presentation for the new leaders, ensure strong community ownership of the project

3.3	Haiti is located in the hurricane corridor	Nature / (weather)	Delays in schedules and costs increase	0.50	0,30	0.15	Weather events delay project activities	Project Manager	Review the project schedule to concentrate the hard work during the dry weeks or months
3.5	Haiti is going through gangs and kidnapping crisis	Security	Delays in schedules and costs increase	0.40	0.30	0.12	Gangs request money or materials from the project	Project Manager / Lead Engineer	Engage the community leaders and local authorities during ~~in~~ all the process. Ensure proper security assessment at the selecting sites

3.7	Haiti has a very limited cadastral system, the security of land tenure is not guaranteed	Land tenure security	Delays in schedules and costs increase (Lawyer costs)	0.60	0.80	0.48	Spoliators start claiming the ownership of the land	Project Manager	Ensure proper land title verification at the project initiating phase, ensure community ownership of the project, request official document from the government for the construction

4.8. Procurement Management Plan

4.8.1. Procurement Management Introduction

Procurement management is one of the most important processes of the project management knowledge area. It ~~it~~ allows the timely mobilization of appropriate resources necessary for the implementation, completion, and achievement of project objectives. At this level, the project will make crucial decisions that will impact the allocated budget.

The procurement plan establishes the framework to which the project team in particular, the procurement team, will refer to proceed with the identification and selection of service providers. The project will use a set of complementary tools and techniques to implement the procurement of the project and achieve the acquisition of goods and services that will be used in the construction project including expert judgment, Make-or-Buy analysis, sources selection analysis etc. Once the plan is complete, the project manager and sponsor will approve it. The project team will update the plan as the project progresses. Any modification in the plan will have to be approved by the Project Manager, depending on the level of change the Manager may also seek approval from the sponsor.

4.8.2. Conduct procurement

The implementation of the procurement plan will be the sole responsibility of the procurement department. This means that most of the major decisions regarding the purchase of the goods and services will be done by the procurement department. The project will need to procure a range of services including architectural and civil engineering services, skilled labor (masons, carpenters, electricians, plumbers etc.). Unskilled labor (laborer). On the other hand, the project will purchase building materials and finishing products for the building. Procurement of goods and services mentioned above will be done through open National tender. Given the quantity of construction materials to be procured, the procurement team will launch calls for tenders which will take into account RFI, RFP and FRQ. Similar approach will be used for services purchasing. The

decisions of the procurement team will be based on detailed terms of references, defined specs and recommendations on quality provided by the project team.

The role of the project teams will be limited to testing the quality of the materials and the analysis of the technical offer submitted by the consultants, based on their analysis, they made recommendations to procurement on the most suitable goods. The procurement team will then combine the technical offer to the financial offer to make a final decision regarding the selection of the suppliers. The project team will ~~Will~~ have very limited decisional influence or involvement in the procurement process. This aims at reducing the risk of the project team having incompatible responsibilities, to carry out and conceal errors and/or irregularities when performing day-to-day activities. The separation of assignment of duties provided checks and balances of responsibilities and ensured timely delivery and quality materials or services.

Chart 29. Procurement plan of the project

No	Description	Unit	Quantity	Justification	Need by
1	Contracting the architecture firm	firm	1	Finish the design works	July 10th
2	Contracting the construction firm	firm	1	supervise the construction works	July 10th
3	Contracting the engineers	pers	3	to implement the construction works	July 10th
4	Contracting the technicians	pers	9	to implement the construction works	July 10th

	Foundation	-		-	
5	8 " solid sandcrete block	Pcs.	1655	to build the foundation	July 31st
6	cement	Bgs	405	to prepare mortar for the foundation	July 31st
7	sand	Loads	5	to prepare mortar for the foundation	July 31st
	Superstructure				July 31st
8	6" solid sandcrete block	Pcs.	2375	To build the superstructure	July 31st
9	4" solid sandcrete blocks	Pcs.	1000	To build the superstructure	July 31st
10	ventilation/breeze block	Pcs.	460	To build the superstructure	July 31st
11	fine aggregate (Sand)	Loads	5	to prepare concrete for the superstructure	July 31st
12	1: 2 : 4 concrete	Cyd.	23	filling block cores .	July 31st
13	12mm diameter bars	Pcs.	135	to prepare superstructure reinforcement	July 31st

14	6mm diameter bars	Pcs.	120	to prepare superstructure reinforcement	July 31st
15	tie wire	Roll	2	to prepare superstructure reinforcement	July 31st
16	1" X 12" X 14' hard wood	Pcs.	43	to prepare Columns, Lintel and Beams	July 31st
17	1 x 8 x 14' Hard wood	Pcs.	65	to prepare Columns, Lintel and Beams	July 31st
18	wire nails	Ctn.	3	to prepare Columns, Lintel and Beams	July 31st
	Roofing Works	-		-	
19	roof steel trusses	No.	9	To prepare the roof of the building	August 20th
20	2" x 2" x 14' treated hardwood	Pcs.	110	To prepare the roof of the building	August 20th
21	3" and 4" wire nails	Boxes	2	To prepare the roof of the building	August 20th
22	28G Alloy corrugated roofing	Bundles	15	To prepare the roof of the building	August 20th
23	roofing sheet nails	Boxes	10	To prepare the roof of the	August

				building	20th
24	1"X 10"X14' Fascia and barge board	Pcs.	20	To prepare the roof of the building	August 20th
25	sun shade canopies	Lft.	115	To prepare the roof of the building	August 20th
	Rough Electrical Works	-		-	
25	Pvc rectangular utility	Pcs.	40	To be used in the electrical works	August 20th
26	Pvc hexagonal junction	Pcs.	10	To be used in the electrical works	August 20th
27	flexible electrical tubes	Rolls	2	To be used in the electrical works	August 20th
	Ceiling Works	-		-	
28	2"X 2"X14' treated ceiling noggin and joists	Pcs.	160	To prepare the ceiling works	Sept 10th
29	2"X 2"X14' treated wood ceiling hangers	Pcs.	90	To prepare the ceiling works	Sept 10th

30	Masonite ceiling boards	Pcs.	110	To prepare the ceiling works	Sept 10th
31	ceiling battens	Bundles	35	To prepare the ceiling works	Sept 10th
32	wire nails for ceiling works	Ctn.	12	To prepare the ceiling works	Sept 10th
	PLASTERING	-	-	-	-
33	fine aggregate (Sand) for mortar (1:3 mix)	Loads	2	For plastering works	Sept 10th
	TILING WORKS	-	-	-	-
34	12" X 12" Terrazzo floor tiles	Pcs.	1800	To be used in the tiling works	sept 30th
35	8" X 12" wall tiles	Ctn.	45	To be used in the tiling works	sept 30th
36	Portland cement for mortar (1:3 mix)	Bags	140	To be used in the tiling works	sept 30th
37	fine aggregate (Sand) for mortar (1:3 mix)	Bags	4	To be used in the tiling works	sept 30th
	Doors	-	-	-	-

38	door frames	Nos.	14	to prepare the doors	Oct 15th
39	4ft X 7ft Panel Doors	Nos.	8	to prepare the doors	Oct 15th
40	3ft X 7ft Panel Doors	Nos.	4	to prepare the doors	Oct 15th
41	30" x 5'-0" flush doors in opening of toilet area	Nos.	4	to prepare the doors	Oct 15th
42	jalousie windows 4' x 5'	Nos.	10	To prepare the windows	Oct 15th
43	Burglary Proof bars	Nos.	10	To prepare the windows	Oct 15th
	Plumbing and Sanitary fittings	-		-	
44	ceramic water closets in toilets	Nos.	4	To be used in the sanitation works	Oct 15th
45	urinal in male toilet area	Nos.	1	To be used in the sanitation works	Oct 15th
46	pedestal wash hand basin	Nos.	4	To be used in the sanitation works	Oct 15th
47	Pvc tissue holders	Nos.	4	To be used in the sanitation	Oct 15th

				works	
48	500gals poly tank	Nos.	2	To be used in the sanitation works	Oct 15th
49	vent caps	Pcs.	2	To be used in the sanitation works	Oct 15th
50	Handicap grab bars	Nos.	2	To be used in the sanitation works	Oct 15th
	FINISH ELECTRICAL WORKS	-		-	
51	wiring connection	Rolls	14	To complete the electrical works	Oct 30th
52	Electrical sockets for light bulbs	Nos.	20	To complete the electrical works	Oct 30th
53	Standard electrical switches	Nos.	11	To complete the electrical works	Oct 30th
54	electrical energy saving light bulbs	Pks	24	To complete the electrical works	Oct 30th
55	Havells 4 panel circuit breaker	No.	1	To complete the electrical works	Oct 30th
56	Solar Power	L/S	1	To complete the electrical works	Oct 30th

	system				
	PAINTING AND DECORATIVE FINISHING	-	-	-	-
57	wall putty	Bags	20	To undertake the painting works	Nov 15th
58	brown enamel based oil paint	Bucket	8	To undertake the painting works	Nov 15th
59	enamel cream oil-based paint	Bucket	6	To undertake the painting works	Nov 15th
60	thinner for enamel paint works	Gals.	20	To undertake the painting works	Nov 15th
61	paint brushes and rollers	L/S	1	To undertake the painting works	Nov 15th

4.8.3. Procurement control

The management of the procurement remained under the entire responsibility of the procurement team, and the contracts/agreements will be the main reference documents that guided the relationship between the procurement team, the Project team and the suppliers, for both goods and services. The control or monitoring of contracts will be crucial for the project. A full set of procedures will be established to ensure that the content of the contracts will be fulfilled as agreed. The project team jointly with the procurement will monitor the contract through check sheets, Contract Administration matrix etc. The template below will be used to monitor the contracts that will be signed in the scope of this project.

Chart 30. CONTRACT ADMINISTRATION MATRIX

CONTRACT ADMINISTRATION MATRIX				
Project:			Contract #:	
Contract Manager:				
Contact:				
Technical Group:				
Validity of the Contract:				
Start Date:		Closing Date:		
ACTIVITIES	**DATE**	**REQUIRES VALIDATION?**	**VALIDATED BY**	**OTHER ASPECTS**
REVIEWS / VISITS				

PAYMENTS / AMOUNTS				
VERIFICATION OF GUARANTEES				
SUBCONTRACTOR CONTROL				
CLOSING CONTRACT				
OBSERVATIONS: Breaches, actions taken, endorsements, fines applied, acknowledgments, temporary receptions, etc.				

Approved by:
Signature and date:

4.9. Stakeholder Management Plan

4.9.1. Stakeholder Management Introduction

The success of the collective emergency shelter construction project depends on the effective management of project stakeholders. Indeed, some stakeholders will have very little influence on the progress of the project as is the case for the families living in the municipality of Beaumont, other actors have a capacity to influence which can be either a lever for the success of the project or considerable harm. The project team, particularly the Manager, will have to purposely seek the engagement of the stakeholders, especially those who will be directly affected by the project. Based on the principles of co-creation, certain stakeholders will be considered as project partners. This is the case of the mayor's office Beaumont, the Beaumont Emergency Operation Center (COUC) which both have the capacity to facilitate the success or failure of the project.

Given the dynamic, cross-functional nature of the project, stakeholder management will be an ongoing activity that will be implemented throughout the life

cycle of the project, to gain support for the project, and anticipate resistance, conflict, or competing objectives among the project's stakeholders.

4.9.2. Stakeholders Identification

In order to avoid any surprises or obstacles relating to the omission of important stakeholders, the project and its team will take the time necessary to identify a wide range of stakeholders through a set of tools and techniques including surveys with the help of key informants from the Beaumont community, focus group discussion or brainstorming, documentary analysis, cartography of stakeholders. The identification process will not only make it possible to establish a mapping of the stakeholders, but will also facilitate the analysis and documentation of information relating to the interests, interdependencies, influence, involvement, influence, potential impact of its stakeholders on the success of the project

Chart 31. Stakeholders Identification

Stakeholders	Functional Area	Roles - Responsibilities
HFHH	Sponsor	Provide resources both financial and human, Approval of designs and constructions' works, Authorize major changes, Provide office support including all the support, services including procurement, Provide and authorize standards and requirements, Feedback on project progress,
DGPC	Sponsor	Provide and authorize standards and

		requirements, Provide authorization to launch the construction, Authorize major changes, Provide resources both financial and human, Approval of designs and constructions' works, Provide office support including technical supervision, Authorize phases of the works, Feedback on project progress,
COUC	User	Supervision of the works Facilitate community engagement Provide requirements Provide labor (Both skilled and non-skilled labor)
Mayor's office	User and regulator	Provide the land for the construction works Provide building permit Manage the use of the building Contribute to provide requirements Ensure supervision of the quality of the work

Project Manager	Staff	Authorize and approve all project expenditures. Ensure that work activities meet established acceptability criteria and fall within acceptable variances. Report project status. Evaluate the performance of all project team members. Partnership management
Lead Engineer	Design, engineering and construction	Approval of designs and quality control Authorize the release of construction material Approval of the supervision reports of the construction firm Approval of the designs Guidance of the engineers.
Field Engineer	Staff	Implement the construction works as described in the design, Supervise the technicians (masons, electricians, plumbers etc.), Sites management, Community interface,
Community member	End of user	Watching over materials while on sites Provide information on risks in the areas (flood and security)

		Provide non-skilled labor
Material suppliers	Suppliers	Provide quality material in a timely manner to the project
Construction firm	engineering service provider	Supervision of the construction works Approval of the phases
Architecture Firm	Design services provider	Provide the design.
Procurement Manager	Staff	Timely purchase of the building materials Develop procurement plan Value for money negotiation based (quality materials)

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Chart 32. Stakeholder Register Matrix

Stakeholders Register Matrix							
Project name	collective emergency shelter construction project	Collective emergency shelter construction project Stakeholders analysis					
Sponsor	HFH and DGPC						
NOTE: The stakeholders' register will be update on a regular basis as the stakeholders, their priorities, influences and impact may change throughout the project implementation**.**							
ID	**Stakeholders**	**Functional Area**	**Roles - Responsibilities**	**Main expectations**	**Major requirements**	**Influence/impact Low/medium/high**	**Additional comments**

	HFHH	Sponsor	Provide resources both financial and human, Approval of designs and constructions' works, Authorize major changes, Provide office support including all the support, services including procurement, Provide and authorize standards and requirements, Feedback on project progress,	Made resources and organizational structure available to the implementation of the project. Ensure viability of the lack of emergency shelter in Haiti and relevance of having similar project in other municipalities.	Successful emergency shelter Completion	Influence: High Impact: High	External
	DGPC	Sponsor	Provide and authorize standards and requirements, Provide authorization to launch the construction, Authorize major changes, Provide resources both financial and human, Approval of designs and constructions' works,	Guaranty the legal framework for the construction of the shelter Make available the organizational structure to support the project. Ensure viability of the lack of emergency shelter in Haiti	Successful emergency shelter Completion	Influence: High Impact: High	External

			Provide office support including technical supervision, Authorize phases of the works, Feedback on project progress,	and relevance of having similar project in other communes.			
	COUC	User	Supervision of the works Facilitate community engagement Provide requirements Provide labor (Both skilled and non-skilled labor)	Guaranty the legal framework for the construction of the shelter , Ensure community buy-in of the project	Successful emergency shelter Completion Involvement of local Civil protection structures in all phases of the Project, Complete the construction Works within the timeframe allocated	Influence: High Impact: High	External
	Mayor's office	User and regulator	Provide the land for the construction works	Deliver building permit for the	Successful emergency shelter	Influence: High	External

			Provide building permit Manage the use of the building Contribute to provide requirements Ensure supervision of the quality of the work	project Guaranty the legal framework for the construction of the shelter , Ensure community buy-in of the project	Completion Involvement of local authorities in the Project implementation, Respect the culture of the locals throughout the designs and constructions	Impact: High	
	Project Manager	Staff	Authorize and approve all project expenditures. Ensure that work activities meet established acceptability criteria and fall within acceptable variances. Report project status. Evaluate the performance of all project team members. Partnership management	Sound management of all project aspect (scope, budget and schedule) to reach the objectives, Reduce risk of cost and time overruns, Provide quality guidance /	Sponsors provide adequate support and organizational support structure Sufficient, appropriate, and quality resources	Influence: High Impact: High	Internal

				leadership to the project team	Clear requirements and guidance Highly performing team		
	Procurement Manager	Staff	Timely purchase of the building materials Develop procurement plan Value for money negotiation based (quality materials)	Delivery timely quality materials, Ensure value for money while purchasing Reduce risk of rework, cost and time overrun Ensure transparency and fair tender process Reduce risk of fraud	Clear goods and services specs/ BOQ/ Realistic procurement plan, Availability of the project team to join the tender process.	Influence: Low Impact: High	Internal

	Lead Engineer	Design, engineering and construction	Approval of designs and quality control Authorize the release of construction material Approval of the supervision reports of the construction firm Approval of the designs Guidance of the engineers.	High quality guidance to engineers Timely management of request from engineers Deliver quality construction works, Reduce risk of rework, cost and time overrun	Leadership support Timely reception quality materials and skilled labor Conduct timely staff payroll Provide quality protection and safety equipment	Influence: Low Impact: High	Internal
	Field Engineer	Staff	Implement the construction works as described in the design, Supervise the technicians (masons, electricians, plumbers	Deliver quality construction works, Provide high quality guidance	Timely reception of quality materials and skilled labor Conduct timely	Influence: Low Impact: High	Internal

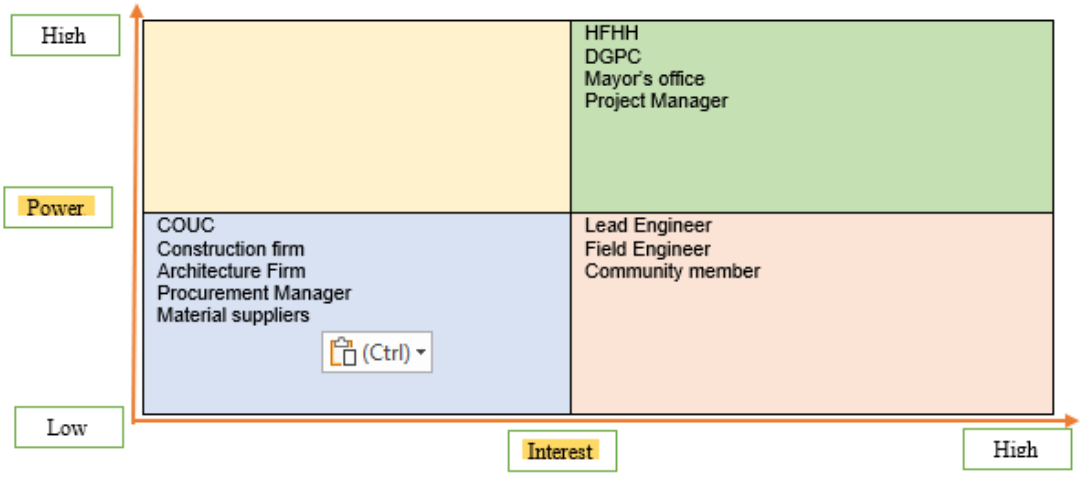
			etc.), Sites' management, Community interface,	to technicians	payroll Provide quality protection and safety of equipment Provide clear job descriptions and guidance		
	Community member	End of user	Watch over materials while on sites Provide information on risks in the areas (flood and security) Provide non-skilled labor	Support the implementation of the project, Informed project team of risk history in the municipality of Beaumont	A finished emergency collective shelter building,	Influence: low Impact: High	External
	Material suppliers	Suppliers	Provide quality material in a timely manner to the project	Deliver quality materials	Facilitate payment on time,	Influence: low Impact: High	External
	Construction firm	engineering	Supervision of the construction	Deliver the detail supervision reports of the shelter	Provide feedback on	Influence: low	External

		service provider	works Approval of the phases	construction works	designs on time, Facilitate payment on time,	Impact: High	
	Architecture Firm	Design services provider	Provide the design according to the requirements	Deliver the designs for a 500m2 building according to details requirements	Provide feedback on designs on time, Facilitate payment on time,	Influence: low Impact: High	External

4.9.3. Power-Interest Classification

As mentioned above the success of the project will depend on an effective and integrated management of the stakeholders. This implies that the project will have to carry out a complete mapping of the various stakeholders and an in-depth analysis of their capacity to influence or be influenced by the project, and the impact they may have on the project. In addition to the tools mentioned above, the project will make use of the Power/Interest Grid to categorize and assess the level of influence of each stakeholder group. The Power/Interest Grid analysis will allow, on the one hand, the project to group the stakeholders according to their ability to influence, on the other hand to develop appropriate strategies that can guarantee the commitment of the stakeholders. Since some of them will only be gathering information about the project, while it will be imperative to seek the partnership of many others in order to guarantee the success of the project which is the case for HFHH, DGPC, COUC and the town hall of Beaumont.

Chart 33. Emergency Collective Shelter Construction Project _ Power/Interest Grid analysis



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4.9.4. Plan Stakeholder Management

The stakeholder management plan documents how the project will engage stakeholders. Through technical analysis, the development of the plan will consider the five categories of stakeholders in order to know their level of engagement in the project and to take appropriate actions to have them more connected and engaged to the project.

Unaware: those who are not aware of the existence of the project

Resistant: Those who do not want the project to be executed. In the case of the shelter construction project, there will be stakeholders who ~~want~~ can be in agreement with the project, however they may have issue with the methodology or a specific activity. In such a situation the Project Manager will have to work on turning this resistant stakeholder into a supportive one.

Neutral stakeholders: Those are stakeholders who do not take any sides, they are aware of the project but are not supporting it or have no desire to oppose it either.

Supportive stakeholders: Those who want the success of the project and provide support,

Leading stakeholders: within this group, there are those who are actively engaged in the project and will want it to be a successful one.

The goal of stakeholder management will be to identify and to convert resistant and neutral stakeholders into supportive ones.

4.9.5. Manage Stakeholder Engagement

Stakeholder engagement management is the process of communicating and working with stakeholders to meet their needs and expectations and to address issues as they occur. Managing stakeholders in the context of the collective emergency shelter construction project will mainly consist of maintaining constant communication with stakeholders to ensure that their information needs are met

and that their requirements and expectations are considered in the activities and results of the project. A variety of communication channels including emails, bill board/information board, meetings, brainstorming sessions, phone calls, social media platforms, newsletter, reports, pictures and publications/case studies will be used by the project to keep the stakeholders informed about the project activities.

Effective stakeholder management will be the responsibility of all team members, under the leadership of the Project Manager. The project team will refer to the communication plan to ensure that the information to be shared with each stakeholder group corresponds to their needs and the mediums retained are accessible to the stakeholder groups.

Ultimately, Stakeholder management will seek to ensure that the level of engagement or involvement of stakeholders is proportional to their ability to influence the project, the potential impact of their actions or decisions on the implementation strategies of the project.

In addition to sharing information with stakeholders, the project will provide them with enough tools to allow them to provide feedback, whether through meetings or surveys, and suggest changes in the project outputs and outcomes. As described above, the changes will have to be documented in the project issues log and ~~to be~~ executed through the change control process.

4.9.6. Monitor Stakeholder Engagement

The project will implement a robust monitoring and evaluation system to monitor the project stakeholder's relationship and tailoring project strategy to engage stakeholders, particularly those with high potential and capabilities to influence the project, both positive or negative. As mentioned above, important stakeholders have considerable power over the success of the project, which power can also negatively affect project performance. Thus, through the monitoring system, the manager will continuously measure the level and the quality of stakeholders' engagement in the project, and if the project is going to meet the stakeholder

requirements, this will consist of collecting information that will allow the PM to either maintain or revise the stakeholder engagement strategy to increase their level of engagement in the project. The monitoring of the stakeholders' engagement will be conducted through a series of complementary tools and techniques including expert judgement, focus discussions, meetings, roots cause analysis, networking, active listening, and feedback. Through weekly and monthly project progress meetings the PM will discuss with the team and sponsors the level of engagement of the stakeholders. During those meetings the PM will explore options to addressing lack of engagement issues. Project will also conduct continuous satisfaction surveys and establish a complaint mechanism system to give the stakeholders the opportunity ~~opportunities~~ to express their grievances or any issues to the project. The results of the stakeholders' ~~s~~ engagement monitoring activities can lead to changes in engagement strategies, or in the stakeholder management plan, or even the project management plan. However, any changes will need to be discussed, documented in the issues, debated, and made through the change process.

5. CONCLUSIONS

1. The overall goal of the FGP is to develop a Project Management Plan for the effective and efficient management of the construction of an emergency shelter in the municipality of Beaumont in Haiti. The project was designed to provide the DGPC and the state with processes, tools and techniques that will ensure effective and transparent management of resources but also guarantee the accountability to stakeholders, particularly sponsors. And end users of the expected results of the project.

2. Through the outputs of the project planning processes, the project management plan defines how the project will be executed, monitored and controlled and closed. The project team has selected a series of processes that will be implemented to complete the project. Through the Project management the project and stakeholders has clarified the project boundaries, scope, and deliverables. A clear process for implementing changes, named Integrated Change Control Process, was established. The project management plan is a dynamic document that will need to be updated and revised throughout the project's lifecycle.

3. A scope management plan outlines the processes involved ~~involving~~ in identifying and managing the expectations of the stakeholders. It defines the project boundaries, document the project inclusions and exclusions and will serve as a guideline to keep the project within specific limits. The project requirements, the WBS and the WBS dictionary of the emergency shelter construction project will allow the PM to avoid constant changing of requirements, rework, falling behind the project deadlines and facing cost overruns.

4. The emergency shelter construction project schedule management plan has been developed to help the project team to achieve the expected results at the right time, deliver successful project outcomes. A clear project action plan or schedule plan was developed and was based on the project WBS and WBS

dictionary, and an excel spread sheet. Finally, clear roles and responsibilities were assigned to every team member to ensure the project completion within the allocated timeframe.

5. The cost management plan took into consideration the estimation of the costs of ~~the~~ activities, the development of the project budget, while it also took into account the reserves of contingency and management in order to face the possible inconveniences or risks that will eventually be materialized. The emergency shelter construction project budget is closely linked to the WBS and project implementation schedule.

6. Quality requirements have been addressed in the quality management plan for the emergency shelter construction project. Through the quality matrices, quality standards, baseline quality of the project, the PM and his team established the expectations or criteria of acceptability of the project results by the stakeholders. The plan also considered the activities to be implemented to ensure quality, control and document quality in order to guarantee the achievement of the objectives targeted by the project.

7. In regard to the resource management plan, as the fifth specific objective, roles and responsibilities' identification was critical in order to create a RACI chart to show the relationship between project tasks and team members. In addition, a resources calendar was developed to have more visibility around resources' allocation.

8. The communication management plan considers the different stakeholders, their needs for information, frequency, and mediums to transfer them. The communication plan plays a crucial role in the stakeholder engagement strategies, but also in the decision-making process. It enables the project team to collect and distribute timely information so that stakeholders can have enough time to analyze them, produce feedback or make decisions in time,

9. Risks are generally inherent to projects due to their unique nature. The risk management plan of the Emergency Shelter Construction Project made it possible to identify and assess the risks to which the project will be exposed. Approximately 14 risks have been identified and documented in the risk register and analyzed through a set of tools including Risk breakdown structure, Probability and Impact Scales, Probability, and Impact Matrix. Through these exercises the risks were prioritized according to their probability of occurrence and the extent of their impact on the project. Finally, the project team identifies mitigation actions in order to reduce their impact in the event that they materialize...

10. The success of the project can only be guaranteed by the timely mobilization of the goods and services necessary for carrying out the project activities, which the project's procurement management plan has addressed. At this level, the PM and his team define the procurement plan which takes into account the goods and services to be purchased, the reasons for which they are purchased, the date they must be delivered, the delivery locations, etc. This plan also considers the purchasing procedures through which these goods and services must be purchased, open and restricted tenders, etc. in order to guarantee efficient use of the resources allocated to the project, and avoid the risk of budget and schedule overruns, and lack of quality.

11. The stakeholder management plan is extremely important, as it has equipped the PM and his team with tools that can help secure stakeholder engagement. Because for various reasons, particularly convergent or divergent interests, they can promote success or lead to its failure. A mapping and an analysis of the influence of the parties have been done, an engagement plan has been developed. These tools took the communication plan which identified the most effective way to keep parties informed and engaged.

6. RECOMMENDATIONS

1. I am recommending to set up a steering committee for the project management that will integrate the PM, the Management of the two sponsors, HFHH and the DGPC, in order to give certain power of decision and control to the DGPC and but above all, to enable them to build their capacity in project management. The steering committee will be able to meet monthly and will constitute a space for discussions between the members on strategic issues, challenges, and joint search for solutions.

2. It will be beneficial for DGPC to consider the capitalization of its experience at the end of this project. This is a method which will help DGPC to learn from its own experience in the current project and will contribute to the development of its practice-based knowledge. DGPC will identify an experience, validate it and document it, this will lead to learning and identifying of good practices.

3. Given the level of uncertainty and risks in the Haitian socio-economic context (rapid inflation, insecurity, natural disasters), and the risks related to corruption, I suggest that the DGPC develops the expertise in project implementation based on the Scrum approach which is an agile development method, in which deliverables will be gradually developed and resources will be regularly updated.

4. DGPC needs to create a single repository share drive to store all the projects developed for the organization to have more accessibility to historical information and previous learnings.

5. It is very professional to consider the 10 knowledge areas in the development of the project management plan, however I would recommend to simplify the steps and reduce the tools and techniques for small or internal projects. In the case of the DGPC, we could have a set of pre-identified tools and techniques that must be used for internal project design or small projects. This would avoid

the project team the struggle of having to select few of them in a wide range of tools and techniques.

6. The FGP was never about delegating competence to the DGPC. Thus, the DGPC will have to develop its project management skills in order to be able to design and implement disaster preparedness projects in the future.

7. Given the importance of emergency shelters in disaster preparedness, the State of Haiti must clarify in the DGPC charter their roles and responsibilities in the construction of temporary emergency shelters which will facilitate the project management mechanism relating to the construction of new emergency shelters.

7. BIBLIOGRAPHY

Project Management Institute. (2017). A Guide to the Project Management Body of Knowledge (*PMBOK® Guide*) (6th Edition). Pennsylvania. USA, Project Management Institute

Project Management Institute. (2019). Practice Standard for Project estimating, (2nd edition). Pensylvania, USA, Project Management Institute

Le Moniteur. (2020, May 24). Decree on the creation, Organization and Operation of the Head Quarters of General of Civil Protection (DGPC). Port-au-Prince Haiti. Le Moniteur

Head Quarters of Civil Protection (DGPC). (2019). National management plan disaster risk 2019 - 2030, Port-au-Prince, Haiti. Head Quarters of Civil Protection (DGPC).

Jan Emblemsva˚g, Lars Endre Kjølstad. (2016). Qualitative risk analysis: some problems and remedies. Norway,

Camp Coordination and Camp Management tools and guidance documents, Global CCCM Cluster Resource, Camp Management Toolkit Link: http://cmtoolkit.org Description:

International Organization Migration. (2015). Community-Based Disaster Risk Management (Working Handbook). Geneva, Switzerland

Ministry of Public Works, Transport and Communications (MTPTC). (2013). National Building Code of Haiti, Port-au. Prince, Haiti

Ministry of Environment, Climate Resilience, Disaster Management and Urban Renewal in the Commonwealth of Dominica (First Edition). (2019). Emergency Shelter Management Manual For Shelter Managers and Coordinators in the Commonwealth of Dominica, Dominica.

Martin J. Williams. (2016). The Political Economy of Unfinished Development Projects: Corruption, Clientelism, or Collective Choice, Oxford, UK.

Comparative Literature: Primary, secondary & tertiary sources. (Feb 2016). Retrieved from https://guides.library.yale.edu/compli

International Organization for Migration (IOM). (2021). Shelter Projects Essentials, Geneva, Switzerland

University of Newcastle Australia. (Dec 2020). Retrieved from https://guides.library.newcastle.edu.au/researchmethods/qualitative

Project Constraints. (n.d). retrieved from https://www.workfront.com/project-management/knowledge-areas/project-constraints

Tool definition. (n.d). retrieved from https://www.merriam-webster.com/dictionary/tool

8. APPENDICES

Appendix 1: FGP Charter

PROJECT CHARTER Formalizes the project start and confers the Project Manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries.	
Date	**Project Name:**
Issue date : November 8th, 2021	Project Management Plan for the construction of an emergency shelter building to be built in the Municipality of Beaumont in Haiti.
Knowledge Areas / Processes	**Applicacion Area (Sector / Activity)**
The project management plan will consider the following knowledge areas: Project Scope Management - Project Schedule Management - Project Cost Management - Project Quality Management - Project Resource Management	Construction

- Project Communication Management - Project Risk Management - Project Procurment Management - Project Stakholders Management **Process groups:** The following two (2) process groups will be considered in the scope of this Project Management plan: Initiating, planning,	
Start date	**Finish date**
November 8th, 2021	April 15th 2022
Project Objectives (general and specific)	
General objective: To develop a Project Management Plan for the effective and efficient management of the construction of an emergency shelter in the commune of beaumont in Haiti Specific objectives: 1) To create the project charter that will be used as input in the elaboration of the different objectives/managment plans. 2) To design a project scope management plan that will establish the methods and procedures to define the nature, expectations and limits of the project and	

manage them to ensure completion within the boundaries agreed with the stakeholders

3) To create a communication plan to ensure proper stakeholders' engagement through timely and appropriate access to information throughout the project design and implementation processes.

4) To elaborate a risk management plan that will establish the approaches and methods of risk management in the implementation of the project, and to minimize their impact on the outcomes of the project.

5) To develop a resource management plan which constitutes the reference framework for the mobilization and allocation of resources according to the expectations and needs of the project

6) To develop a cost management plan that will serve as a guide for effective management of project costs including realistic budget forecasts, financial resources mobilization, efficiency / value for money, budget monitoring and control and finally close the project within budget.

7) To produce a stakeholder management plan that will establish the methods and approaches facilitating the engagement of actors who can influence, whether upstream or downstream, the outcomes of the project.

8) To build a project quality management plan which will prioritize the processes and procedures that will facilitate the definition of criteria and indicators for quality measures, and guarantee the satisfaction of the expectations of the project stakeholders.

9) To develop a procurement management plan that will define the approaches, processes and procedures that can ensure that the right materials are available to the project when and where needed. Green procurement will be also prioritized.

10)To Create a schedule management plan, which will take into consideration approaches, methods, processes and procedures that will guide the determination and management of the time allocated to project activities and ensure its completion within budget.

Project purpose or justification (merit and expected results)

Haiti ranks as one of the countries with the highest exposure to multiple hazards. The country lies in the middle of the Caribbean Basin and has the highest vulnerability rating in terms of cyclones among the region's small island states. The recurrence of natural disasters often trigger internal displacement of populations to collective centers/emergency shelters located in buildings that are neither safe nor designed for accommodation. Due to lack of planning, resources, leadership etc the Civil Protection Unit and the Ministry of the Interior, both in charge of ensuring that the communities are prepared for potential disasters, have identified pre-existing buildings across the municipality of Beaumont (schools, churches, etc) to be used as evacuation centers for local populations in case of emergency. However the living conditions in these buildings fail to meet minimum standards and do not ensure a life of dignity to be considered as emergency shelters.

Haiti has a long history of unfinished infrastructure or construction works, be it roads, schools, bridges to name a few. The general public has a very negative perception of the performance of the Haitian government, whether local or central in terms of the implementation of infrastructure projects. This phenomenon of project noncompletion is usually explained by four main factors: ***1) non-completion may be due to corruption,*** either for private gain or to finance political activities. In this view, projects go unfinished because someone stole the money.- ***2) Nepotism:*** During the recent years there have been a lot of public scandals concerning companies not having the necessary expertise to do the work and which have had negotiated sole source, while the procurement procedures requires open tenders- ***3) Lack of monitoring and contro***l, at this level the companies in charge of project implementation do not

regularly monitor the costs and the project implementation schedule. Thus, projects end up running out of money while activities are unfinished. ***4) non-completion could arise in theories of clientelism*** in which it may be sometimes rational for politicians to deliberately leave projects unfinished to increase voters' incentives to reelect them .

As a result, Habitat For Humanity, proposes to partner with the Civil Protection Unit to build in the municipality of Beaumont an emergency shelter in applying proper Project Management principles promoted by the PMI through the PMBOK.

The introduction of the Project Management Plan into the operational practices of the Civil Protection Unit will allow the latter and authorities of the municipality of Beaumont to strengthen their capacity in project management and have a better overview of the design and implementation of the construction of the temporary shelter, and guarantee the satisfaction of stakeholders. The application of the project management principles and best practices will allow the following benefits:

1) ***Community involvement:*** Through the stakeholders and communication management plans, the Civil Protection Unit and municipal authorities will have the opportunity to involve members of the community who could share their requirements, offer their contribution in terms of time, skills, materials and other resources to facilitate the complettion of the construction of the temporary shelters. ***2) Cost and schedule management plans:*** Both will jointly allow to manage the resources allocated to the project in an efficient manner, to take intelligent decisions that can allow the project to optimize the use of resources and to finally complete the project on time and in the planned budget. ***3. The procurement and resource management plan:*** will facilitate the identification, acquisition and availability of appropriate and quality materials when and where they are needed. Thus, the construction of the temporary shleter will be completed on schedule. ***4) Risk management plan:*** Whatever the nature of a project or its implementation environment, projects are naturally dependent on risks (internal or external) which can affect the implementation and the results of the project. The risk management plan will allow the project to take into consideration early on, the risks that may influence the budget, schedule, quality or results of the projects.

In summary, the observance of the principles of project management, as the PMI has stipulated, will allow the Civil Protection Unit to better use the ressources that were underutilized and difficult to obtain or access, make more efficient trade-offs among factors of production or potential suppliers of construction services, reduce costs and subsequently increase economy efficiency and achieve the expected outcomes.
Description of Product or Service to be generated by the Project – Project final deliverables
The Project Management Plan for the construction of the emergency shelter in the municipality of Beaumont. It will include the subsidiary plans such as Scope Management Plan, Schedule Management Plan, Cost Management Plan etc.

Assumptions
The assumptions for the project are as follows: 1) Three months are sufficient to complete the project 2) Information to develop the Project Management Plan will be accessible (Civil Project Unit, Municipality office) 3) The prices of materials will be stable for the next 4 months 4) Only 1 person can develop the Project Management Plan
Constraints
1) Limited time to develop the Project Management (Only three months allocated to the development of the PMP) 2) Limited human resources (Only the Project Manager is working on all plans)
Preliminary risks
3) Time allocated to develop the Project Management Plan is not sufficent, 4) Unsufficient human resources (The Project Manager is not capable of developing all the plans related to project management plan)
Budget
The total budget will be 1000USD to cover the cost of copies, internet and shipping

fees

Milestones and dates

Milestone	Start date	End date
FGP Charter	November 8th	November 14th
FGP WBS	November 8th	November 14th
Introduction Chapter	November 15th	November 21st
FGP Schedule	November 15th	November 21st
Theoretical framework chapter	November 22nd	November 28th t
Methodological framework chapter	November 29th	December 5th
Abstract / Executive summary	December 6th	December 12th
Bibliography, Tables Index, Figures Ind	December 6th	December 12th
Signed FGP charter	December 6th	December 12th
Tutoring	December 13th	March 13th
Reading By Reviewers	March 14 th	March 27 th

Adjustment	March 28th	April 10th
Presentation to the board of examiners	April 11th	April 15th

Relevant historical information

Despite Haiti's level of vulnerability to natural hazards (earthquakes, cyclones, landslides, floods, etc.), the concept of temporary shelters including their construction and management is still very recent. During the last five years, thanks to a project implemented in partnership with the UNDP, the Civil Protection Unit has been able to popularize the concept of emergency shelters and develop a guide for building and managing temporary shelter centers. Habitat For Humanity, as an organization specialized in the construction of housing, have worked in 2020 on the upgrading of 15 public and community buildings (Schools, Church, community centers) to enable them to fulfill their function of temporary shelters

Stakeholders

Direct stakeholders:

Lecturer : Mr Carlos Brenes Mena

Tutor : TBD

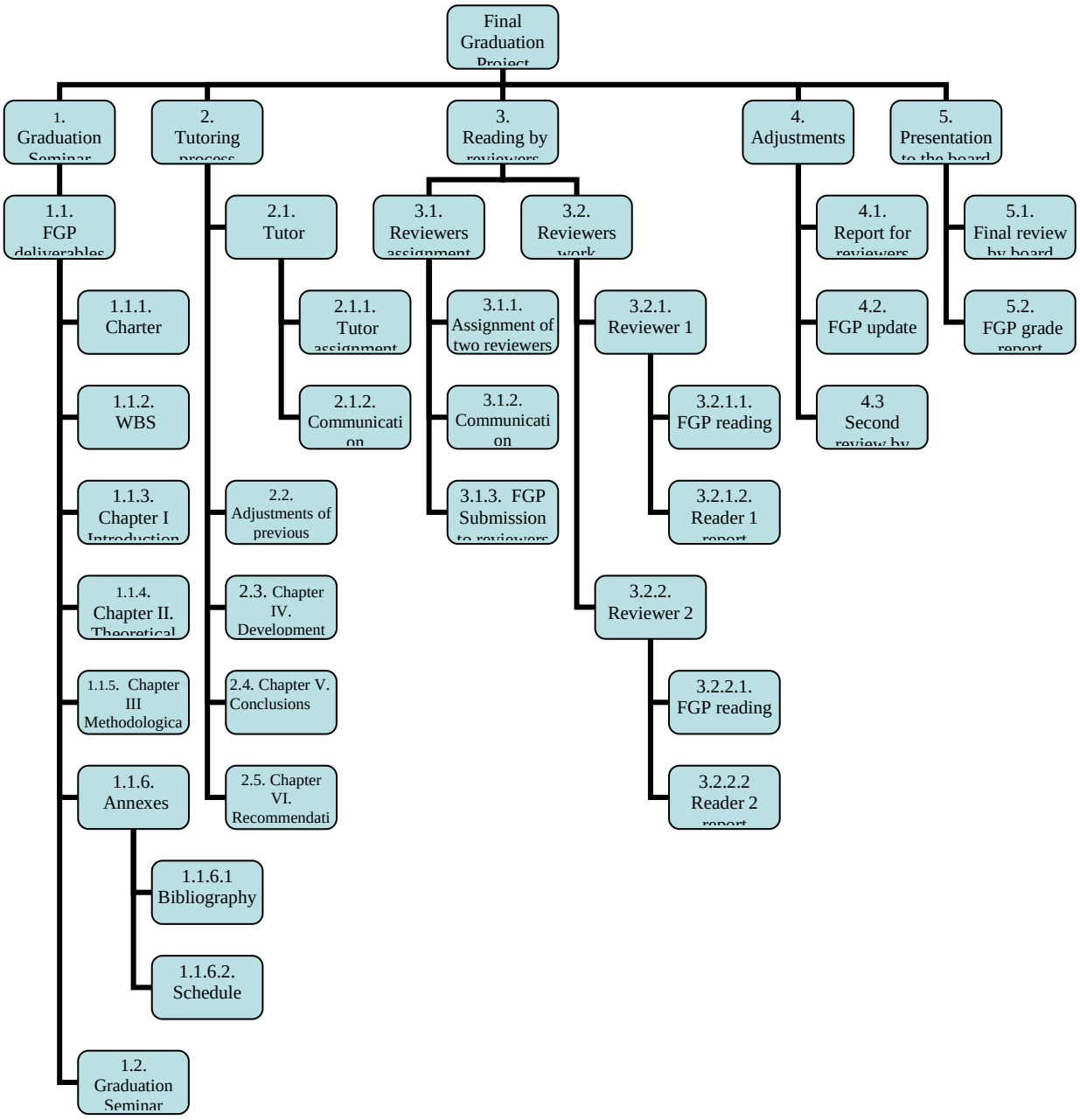
Project Manager : Jean Frenel Tham

Indirect stakeholders:

Mayors of the commune of Beaumont / Civil Protection Unit (information providers)

Project Manager: Jean Frenel Tham	**Signature:** *THam Jean Frenel*
Authorized by:	**Signature:**

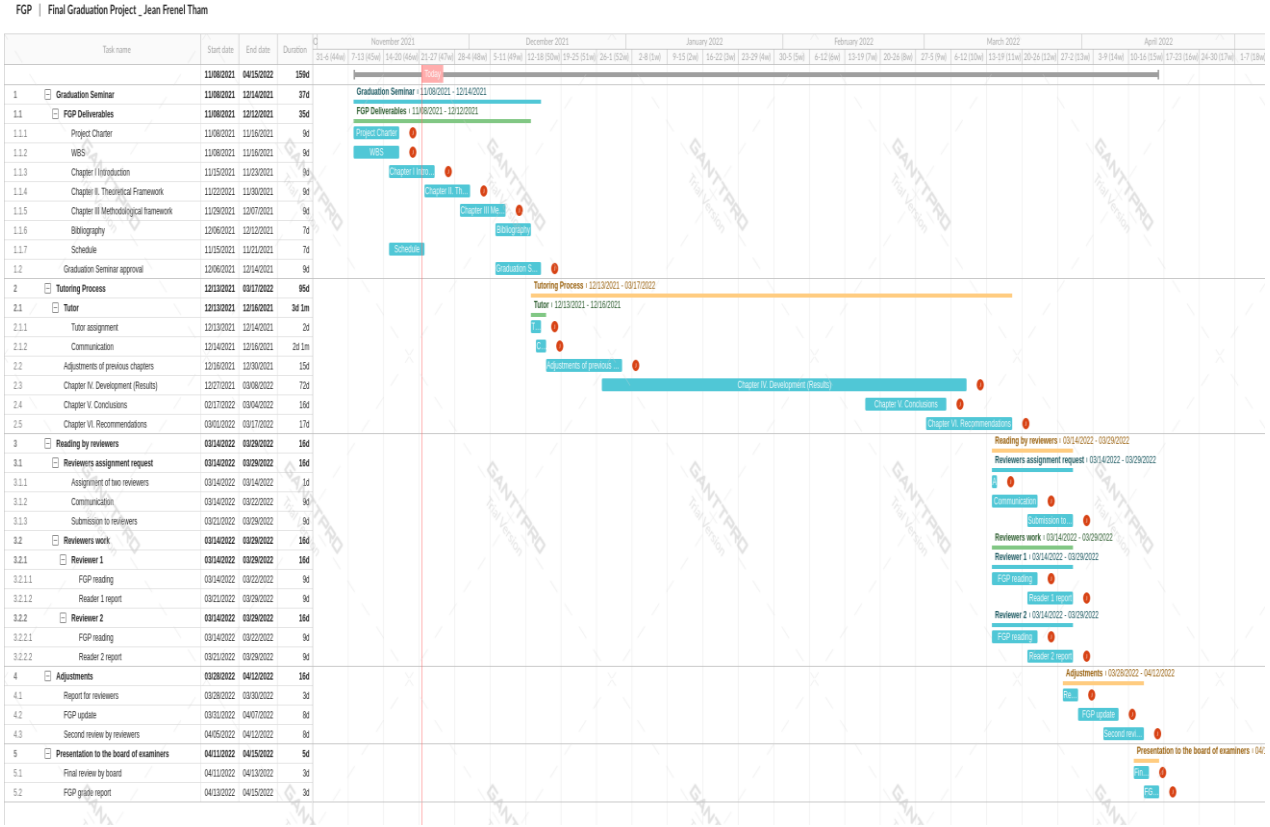
Appendix 2: FGP WBS



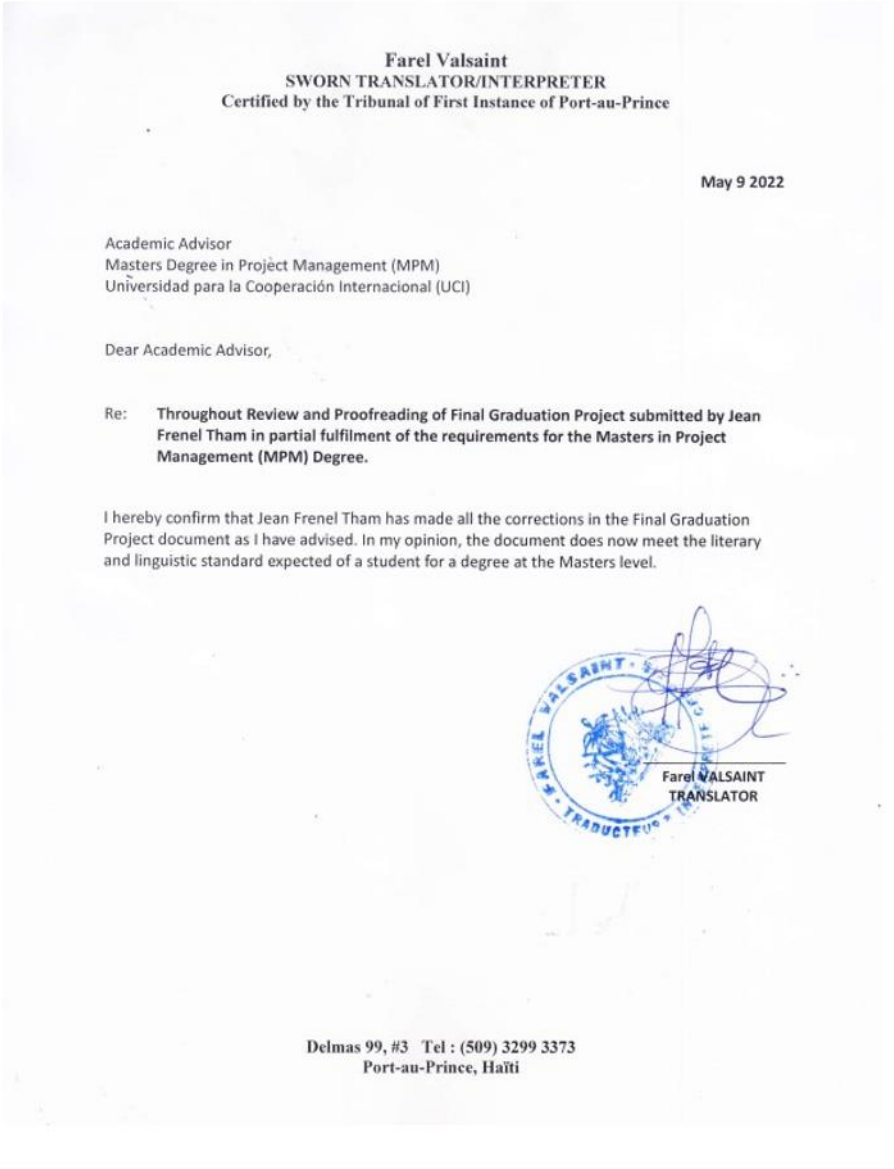
Appendix 3: FGP Schedule

The Schedule of the final graduation project is below, it has been done on GanttPRO. The exported version is not totally clear. However a soft version can be accessed through the following link :

https://app.ganttpro.com/shared/token/862f3cf4d717caf0faa0f3cdaf05b12f33d97a3d58136bbb3117a6d4c4084b7e/739454



Appendix 4: Philologist review report



Farel Valsaint
SWORN TRANSLATOR/INTERPRETER
Certified by the Tribunal of First Instance of Port-au-Prince

May 9 2022

Academic Advisor
Masters Degree in Project Management (MPM)
Universidad para la Cooperación Internacional (UCI)

Dear Academic Advisor,

Re: **Throughout Review and Proofreading of Final Graduation Project submitted by Jean Frenel Tham in partial fulfilment of the requirements for the Masters in Project Management (MPM) Degree.**

I hereby confirm that Jean Frenel Tham has made all the corrections in the Final Graduation Project document as I have advised. In my opinion, the document does now meet the literary and linguistic standard expected of a student for a degree at the Masters level.

FAREL VALSAINT · TRADUCTEUR ·

Farel VALSAINT
TRANSLATOR

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