UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

A PROJECT MANAGEMENT PLAN FOR THE DEVELOPMENT OF LINEON VILLAGE: A SOCIAL HOUSING PROJECT IN THE NORTHERN REGION OF HAITI FOR THE BENEFIT OF LOW-INCOME PEOPLE

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DEDICATION

To the Holy Spirit who inspires me, guides me and always protects me.

To my grandmother, Rose-Philomène Debreus for her many sacrifices during my first years at school.

To my father, Dieuphete NAPOLEON, my mother, Roseline Debreus and my wife Wichmy Saintil.

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First of all, after God who always creates a way for me, when everyone thought there was none. I want to thank my family, especially my wife who had to endure my absence during working hours, especially on evenings and weekends when I had homework to do.

I would like to thank all the staff of the Universidad para la Cooperacion International, in particular, the facilitators of the various courses for allowing me to have this solid training in project management. I really liked the emphasis on regenerative development, because in the face of today's major global climate challenges, it is important to orient professionals from different fields towards this approach.

I am very grateful to the Organization of American States (OAS) for granting me a scholarship for the payment of part of the tuition fees for this study.

Special thanks to Mrs. Maria Fernanda Ibarra for her invaluable support during the tutoring process. I also thank Professor Alberto Redondo Solas for his support.

I express my gratitude to Professor Roger Eduardo Valverde Jimenez for his guidance during the graduation seminar.

Finally, I would like to thank all the people who helped me take this decisive step in the pursuit of my professional career.

ABSTRACT

The objective of this document is to present a project management plan following the guidelines of the PMBOK Guide (2021) which facilitates the development of a social housing project in the northern region of Haiti. This project, which is initiated by the company LINEON Group, aims to contribute to the resolution of the problem of slums which the majority of Haitian urban cities are currently facing.

With a budget of thirty-nine million, four hundred and thirty thousand US dollars (39,430,000.00 USD), the LINEON Village Project consists of the construction of a village of forty (40) houses of seven (7) floors including four (4) apartments on each floor, in the northern region of Haiti over a period of five (5) years.

The end product of this document is the development of a comprehensive project management plan that can ensure a successful implementation of this social housing project. Key deliverables of this project management plan include: a project charter, scope, schedule, cost, quality, resource, communications, risk, and stakeholder management plans and a P5 analysis.

An analytical methodology is used for the collection and processing of the data necessary for the elaboration of the document.

Key words: ***Project management, social housing, project charter, scope, schedule, cost, quality, resource, stakeholder, risk, P5 analysis***.

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ABBREVIATIONS AND ACRONYMS

FGP	: Final Graduation Project
IDB	: Inter-American Development Bank
PEPSH	: Public enterprise for the promotion of social housing
PMBOK	: Project Management Body of Knowledge
PMI	: Project Management Institute
RG	: Regenerative Development
UCI	: Universidad para la Cooperación Internacional
PEPSH	: Public Enterprise for the Promotion of Social Housing
UNHABITAT	: United Nations agency for human settlements
NIOS	: National Institute of Open Schooling
GPM	: Green Project Management

EXECUTIVE SUMMARY

In developing countries, the phenomeno n of slums remains one of the great challenges facing urban cities, because in search of a better life, a large part of the inhabitants of rural cities migrate to already overcrowded and disadvantaged urban areas. Cap-Haitien, the second city of Haiti, is one of the cities most affected by this phenomenon, because the protected areas (coasts and hills) are disfigured by small anarchically built houses.

To remedy this problem, which is only getting worse day by day, it I s essential that large, well-planned real estate projects be implemented. Thus, in order to develop a social housing project in Cap-Haitien, aware of the usefulness of a project management plan in the success of a project, the company (LINEON Group) has requested expertise in order to develop a project management plan following the recommendations of the PMBOK Guide.

The general objective of this project was to develop a social and participatory housing project in the northern region of Haiti of forty (40) buildings from 2025 to 2030. And the specific objectives were: to build 1120 apartments by 2030, to build basic infrastructures such as: access road, portable water, electrical system for every house by 2028, to build other infrastructures such as: park and green space, sport center… by 2030, to establish a sanitation system to clean the city and repair existing infrastructures as needed by 2030, to build premises for fire brigade and National police by 2030.

The methodology for this research was mostly analytical. A data analysis was carried out for the elaboration of a methodological solution by analyzing the existing environment, identifying strategies, tactics that allow to optimize and potentiate the quality of this housing construction project initiated by the LINEON Group company.

The LINEON Village Project consists of the construction of a village of forty houses of seven (7) floors including four (4) apartments on each floor, in the northern region of Haiti with a budget of thirty-nine million, four hundred and thirty thousand US dollars (39,430,000.00 USD) over a period of five (5) years. All the construction activities will be executed by contractors (construction company) that will be selected by LINEON Group, including all procurement activities relating to the construction.

Knowing that the promoter of this project, namely LINEON Group, doesn’t have a lot of experience in the development of real estate projects, the success of this project will depend on the ability of the project team to draw inspiration from other projects of the same already carried out by other organizations, but also to develop a strategy that can guarantee the full involvement of local actors. Also, independent expert should be hired by LINEON Group to ensure that the project deliverables respect the project’s goal and standards.

1 INTRODUCTION

1.1. Background

Created with the objective of revolutionizing the real estate sector in Haiti, particularly in the northern region of the country, LINEON Group is the expression of its founder's concern with the problem of housing and land use planning in Haiti. Due to the country's precarious economic situation, people arrive in big cities without planning and use uninhabitable spaces to build houses in violation of basic construction and land-use planning standards.

For example, a lake located in downtown Cap-Haitien which could be exploited economically and for tourism attraction, is unfortunately filled on both sides by slums which tarnish the image of the country's second city. The founder of LINEON Group, concerned about these issues, has always thought of contributing to the search for a lasting solution. It should be noted that the Haitian government has already developed several social housing projects in the country, with the financial support of international organizations. However, the real problem is that these projects are implemented in post-disaster contexts. After the earthquake of January 12, 2010, many people lost their homes and the government had an obligation to act urgently.

Unfortunately, with limited resources in the face of major urgent problems, the Haitian Government is only satisfied with a temporary solution, because even with the goodwill of international organizations, public institutions are not strong enough to envisage lasting solutions in social housing. There is a serious problem in the public policy of social housing in Haiti, because the procedures are not clear and the institutions are not coordinated

on the issue. According to the World Bank (2014), nothing was clear about the main institution that was to take charge of the issue of housing for the population after the January 2010 earthquake in Haiti. Thus, the institutional and technical challenges were the main obstacles to the reconstruction of the country, because there was a lack of direction and coordination, which meant that many (and sometimes inexperienced) agencies tried to come up with approaches and develop solutions in parallel. (World Bank Group, 2014).

This social housing project will be developed with a different approach in that it consists of building a standard village with comfortable houses where people can buy apartments or houses simply with installments, unlike the projects recently developed by the public enterprise for the promotion of social housing (PEPSH).

This project will be developed in the Northern state of the Country, particularly in the district of Cap-Haitien (Haitian Creole: Kap Ayisyen). This district is made up of three (3) municipalities: Cap-Haitien, Limonade and Quartier-Morin. Founded in 1670 by the French, Cap-Haitien is an elegant city that was known as Cap-Français or "Paris of the Antilles". As for Quartier-Morin, this city founded in 1780, was once a district of the larger neighboring Cap-Haitien before splitting into a separate commune. The town of Limonade, was founded in 1676, and today hosts the largest university site in the country "King Henri Christophe University, new campus of the State University of Haiti, which earned it the nickname of "university town" and the largest waste treatment site in Haiti (Haiti Local, 2022).

1.2. Statement of the problem

With an estimated population of 404,766 inhabitants in 2017 over an area of 53.5 km^2, Cap-Haitien is one of the cities most affected by this phenomenon of slums and also one of the most threatened by the increase in the rate of internal migration because it is the second largest city in Haiti after Port-au-Prince. (IDB, 2017).

Until today, despite the efforts that are being deployed, there is no cadastre in Haiti. This means that the question of land ownership remains a real challenge in this country, which makes it very difficult to buy land in Haiti without raising land disputes. Only the Haitian government is less likely to be challenged and evicted from land due to land disputes. Thus, in a country where the economic situation is unfortunately precarious for the majority of the population, taking the risk of acquiring land is a major issue because it is possible to lose years of savings in an ill-gotten property. It's always better when the government declares a portion of land of public utility to promote the realization of social projects like this one.

In this perspective, large-scale projects help to circumvent the problem of property disputes, because the project promoters will take all appropriate measures to comply with all legal requirements at the highest level. Above all, no social housing project is possible without the support of state authorities and the government should have the privilege of joining forces with all civil society organizations and companies that show the will to implement major social housing projects which will make it possible to fight against the phenomenon of slums and to eliminate the consequences that are detrimental to the development of the cities concerned, and even of the country in general. It is with this in

mind that this social housing project is being developed in the northern region of Haiti, in order to serve as a model for other similar initiatives in other regions of the country.

1.3. Purpose

According to Amnesty International (2015), before the January 2010 earthquake, the housing sector in Haiti was already in crisis, as the country was short of approximately 700,000 homes and 250,000 homes were destroyed or severely damaged by the earthquake.

Due to the country's precarious economic situation for decades, people no longer want to live in the countryside and are heading to the capital Port-au-Prince or other major cities in the hope of finding opportunities or services not available in the countryside. Thus, these cities have increasingly become overcrowded slums with anarchic constructions, even in tourist areas.

At Cap-Haitien, the situation is increasingly serious, because all around the city center, the hills, the coasts and even the purely tourist places are slums. In addition, within these slums, the population lives in delicacy and all forms of insecurity.

Social housing projects with constructions respecting seismic standards and basic infrastructures are more and more necessary in Haiti, particularly in the North region in order to facilitate the housing of low-income people in houses with modern comfort and in good condition, at the same time fight against the phenomenon of slums and all its consequences. Thus, this project aims to build a village of forty (40) buildings of seven (7) floors, including four (4) apartments on each floor.

The apartments will be sold in installments. The average price of an apartment is forty thousand dollars (40000.00 USD). This amount will be paid as follows:

Step	Payment
On order	Three thousand (3000.00) USD
After major works:	Eight thousand (8000.00) USD
On delivery	Four thousand (4000.00) USD
Installments over 10 years	291.67 USD/Month

1.4. General objective

To develop a project management plan following, guidelines of the PMBOK Guide that facilitates the development of a social housing project in the northern region of Haiti.

1.5. Specific objectives

- Create a project charter to define the key input elements required to develop the project management plan.
- Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.
- Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.
- Develop a Cost Management Plan to plan, estimate and manage the budget for all project activities, deliverables and resources.
- Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.
- Develop a Resource Management Plan to identify, acquire and manage all physical and human resources needed to complete the project successfully.

- Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.
- Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.
- Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by the project and ensure that their expectations are understood, recorded and considered throughout the project life cycle.
- Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development to minimize and if possible, eliminate any processes, resources or outcomes that could cause further harm to the environment.

2 THEORETICAL FRAMEWORK

2.1 Introduction

As in many developing countries, the housing crisis remains one of the many problems that Haiti has faced for decades. Due to the precarious economic situation, the urban communes (Port-au-Prince agglomeration and the capitals of each department) are affected by the internal migration of inhabitants of provincial towns where the economic situation is more difficult. Unfortunately, the existing infrastructure in the country does not meet the needs of the population living in rural areas or the social services fail to reach them. Unfortunately, these people arrive without any initial planning for establishing themselves upon arrival in the city, including housing.

Thus, cities have more and more slums, because once they arrive in town, people build in sometimes unsuitable places and in an anarchic way. According to UNHABITAT (2018), by 2030, 60% of the world's population will live in cities, and 90% of urban growth over the next decades is likely to occur in low- and middle-income countries.

This same organization predicts that by 2050, 95% of the growth of urban areas over the next two decades will occur in cities, yet all facets of human activity, including health, economy, society and the environment suffer the consequences of urbanization. This means that the slum phenomenon must be part of the priorities of governments and civil society initiatives, especially in developing countries characterized by a context of stagnant economies and poor planning and governance. It is now easy to see poverty and inequality in cities just by looking at slums, informal settlements and inadequate housing.

However, it should be clarified that urbanization in itself is not a problem, but the conditions surrounding it. According to the World Bank (2017), although the relationship between urbanization and economic growth is not always linear, the effect of urbanization on economic growth is often positive all over the world. For example, between 1996 and 2015, historical data showed that for more than 180 countries, there is an increase in income as the share of the population living in urban areas increases, because urban densities promote productivity and provide opportunities to improve people's livelihoods and quality of life, ultimately lifting many people out of poverty. But the biggest problems with urbanization arise when there is poor management of densities, and we end up with externalities such as slums, congestion, pollution and high crime rates that can overshadow the benefits of urbanization.

In Haiti, Cap-Haitien is one of the cities most affected by this phenomenon of slums and also one of the most threatened by the increase in the rate of internal migration. According to the IDB (2017), with an estimated population of 404,766 in 2017 over an area of 53.5 km2, Cap-Haitien is the second largest city in Haiti after Port-au-Prince.

Moreover, due to the non-existence of a national cadaster, it is very difficult to buy land in Haiti without raising land disputes, because only the Haitian government is less likely to be evicted from land due to land disputes. Thus, it is very difficult for someone who does not already have too many financial means, to take the risk of acquiring land, if he does not have some insurance on the history of the property. It's always better when the government declares a portion of land of public utility to promote the realization of social projects like

this one. As shown in the figure below, the property registration process is quite lengthy in Haiti.

Thus, there is an urgent need for the government to join forces with civil society organizations in order to encourage or implement major social housing projects that will make it possible to combat the phenomenon of slums and eliminate its consequences, that are detrimental to the development of the towns concerned, and even of the country in general. It is with this in mind that this social housing project is being developed in the northern region of Haiti, in order to serve as a model for other similar initiatives in other regions of the country.

Figure 1. The process to register a property in Haiti

STEP TO REGISTER TRANSFER OF LAND	ACTORS	ESTIMATED COST	ESTIMATED TIME
1. Permission to survey land	Commissaire du gouvernement (in commune)		2 months
*2. Survey land**	Surveyor	HTG 15,000	1 month
3. Prepare sales agreement	Notary	1 percent of sale price; VAT (percent varies by property type)	2-3 weeks (simultaneous with surveying)
4. Obtain 'avis de cotisation' and pay for registration	DGI	Various fixed fees and supplementary taxes and stamp duty, as well as fees for registration, transcription (based on percentage of property price)	1 day
5. Register sale	Local community office of DGI		6-9 months

Source: Doing Business 2017

**** land surveying is required every ten years and can be no older than five years at time of transaction***

Source: Lozano-Gracia, N. & Lozano, M.G.(eds.) (2017), Haitian Cities: Actions for today with an eye on tomorrow, International Bank for Reconstruction and Development / The World Bank

2.2 Company/Enterprise framework

2.2.1 Company/Enterprise background

LINEON Group is a young company that strives to be a key player in the real estate market that makes real estate transactions possible in the 145 cities of Haiti and in some cities of the Dominican Republic from all over the world.

But, the development of a large real estate project for the benefit of people with low incomes, was the basis of the creation of the company. It is in this perspective that LINEON Group will be the main promoter of this social housing project which will indeed require a large contribution from the Haitian government.

2.2.2 Mission and vision statements

Through this project, our vision is to become, in the next 20 years, a model of social housing project for all the other regions of Haiti, not to mention in the Caribbean, as the largest real estate services company in Haiti in terms of geographic coverage and SEO services.

Our Mission is to contribute to the elimination of the consequences of the phenomenon of slums in Haiti, particularly in the northern region of Haiti, by giving the possibility to low-income people to become owners of an apartment or a house in a village respecting international standards for the construction of modern village.

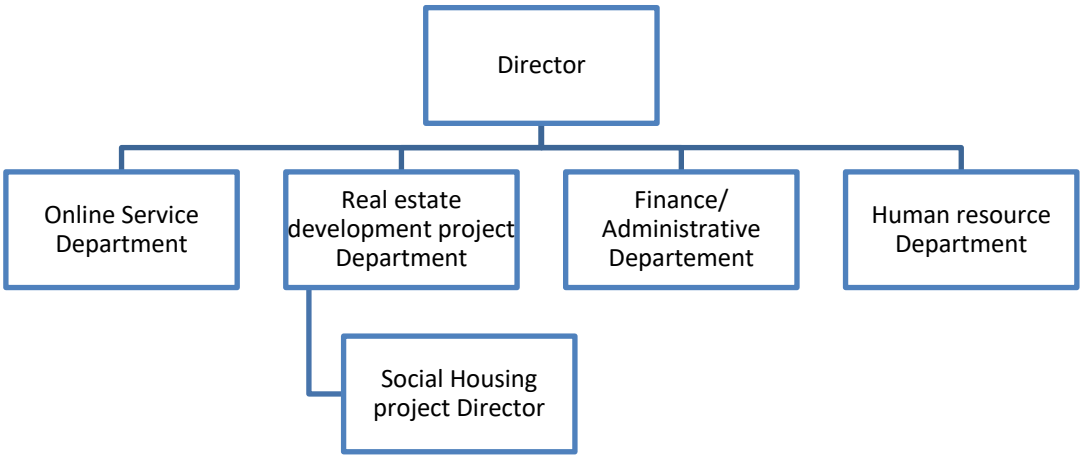
Thus, LINEON group will become a reference in the field of real estate in Haiti, while reflecting on other major real estate and tourism projects to be carried out in the country.

2.2.3 Organizational structure

An organizational structure is the hierarchical framework and the set of rules that govern the decision-making, tasks, coordination and internal division of labor of an organization. It is generally presented in the form of an organization chart. Depending on the organization, the organizational structure can take different forms. (PMI, 2017)

The LINEON group Organizational Structure is divided into four (4) departments including Online Real estate services, Project department, Finance/ Administrative department and the Human resource department. The following chart, helps to understand the organization chart of LINEON Group.

Figure 2. LINEON Group Organizational structure



Sources: Adapted from the FGP Template Example, UCI, 2022, with authorization from the author. Own creation.

2.2.4 Products offered

Currently, our basic services are divided as follows:

- Advertising services to real estate brokers and agencies to list the properties they are responsible for selling or renting.
- Property management service (for sale or for rent). We take care of all the tasks instead of the owner for a commission.
- Digital marketing services via our web/mobile application.

However, through this Social Housing project, we will build and sell properties after the implementation of the project.

2.3 Project Management concepts

2.3.1 Project management principles

According to the PMBOK Guide (2021), the main principles that will be applied are:

- Project organization Structure: The organizational structure is one of the variables that influence the development approach. Consisting of various hierarchical levels, rigid and bureaucratized, an organizational structure frequently uses a predictive approach. In projects based on adaptive approaches, flat structures are commonly more suitable and projects can work with self-organizing project teams.
- Project goal and objectives: An **« objective »** is: « an outcome toward which work is to be directed », « a strategic position to be obtained »; « a purpose to be achieved »; « a result to be obtained », « a product to be produced », « a service to be performed ». The project goal includes a **« deliverable » that** 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.

2.3.2 Project management domains

The main project performance domains that will be used in this project development are:

- People: How to deal with people
- Process: Technical skills of doing the work of being a project manager
- Environment: Project Sustainability

2.3.3 Predictive, adaptative and hybrid projects

This project requires a predictive life cycle, because it's an infrastructures project, everything is supposed to be planned first then executed. But let's remember that In Predictive strategy, **a** precise plan including timetable, budget and deliverables is created and adhered to throughout the duration of the project; the Adaptive (Agile) strategy emphasizes on adaptability and flexibility and is ideal for projects with quickly changing requirements and a high level of uncertainty; and finally, the hybrid technique**,** encompasses both the predictive and adaptive approaches and is best for projects requiring a balance of predictability and flexibility (PMI,2017).

2.3.4 Project management

To define project management, it's really important to remember first of all that a "project" is a temporary effort that is carried to create a unique service, product or result, and all projects have the ultimate goal of obtaining some tangible or intangible benefit for the organization or society. (PMI, 2017)

According to Cervantes (2016), the concept of "Project management" encompasses strategic, tactical and operational levels as directly responsible for their proper management ..." and that "this management, for its proper development, is made up of organizational capabilities that must be addressed, developed and synchronized in order to that the projects successfully meet the objectives and contribute to the strategy". In other words, project management is the application of knowledge, skills, tools and techniques to project activities to meet the project requirements which enable organizations to execute projects effectively and efficiently.

2.3.5 Project management knowledge areas and processes

The PMBOK Guide identifies five groups of process and ten knowledge areas in project management. The five groups of process include: Initiating (*Develop « project charter*); Planning (*Develop « project management plan* ») ; Executing (*Direct & manage project work, Manage project knowledge*) ; Monitoring & Controlling (*Monitor & control project work, Perform integrated change control*) and Closing (*Close project or phase*).

The ten knowledge areas are: Integration, Scope, Schedule, Cost, Quality, Resource, Communication, Risk, Procurement, Stakeholder management. (PMI, 2017)

2.3.6 Project life cycle

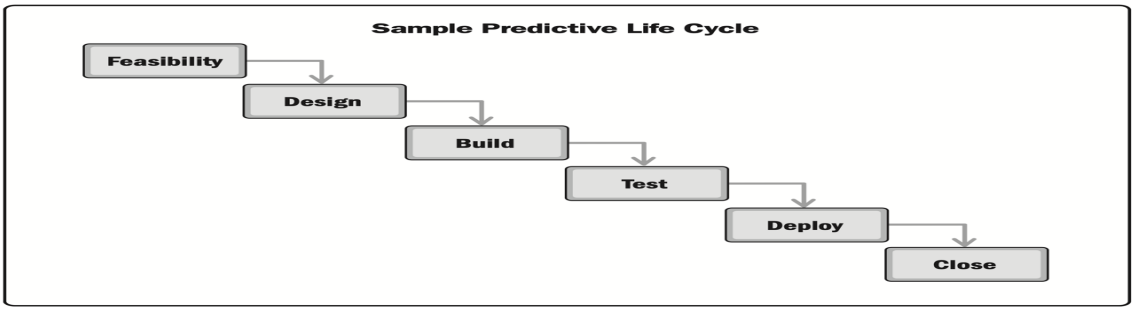
According to the PMBOK Guide, the project lifecycle, also known as the project management lifecycle, refers to a series of phases through which a project passes from inception to completion or the set of activities required to obtain the project's expected results, and how they are executed over time. In other words, it contains all the phases and the list of actions needed to successfully achieve the goals and objectives of the project. Those activities can be organized in many different ways, which derive in the four main types of project life cycles, as presented in the PMBOK Guide in the following figure. (PMI, 2021)

Figure 3. Project Life Cycle

Predictive	Iterative	Incremental	Agile
Requirements are defined up-front before development begins	Requirements can be elaborated at periodic intervals during delivery		Requirements are elaborated frequently during delivery
Deliver plans for the eventual deliverable. Then deliver only a single final product at end of project timeline	Delivery can be divided into subsets of the overall product		Delivery occurs frequently with customer-valued subsets of the overall product
Change is constrained as much as possible	Change is incorporated at periodic intervals		Change is incorporated in real-time during delivery
Key stakeholders are involved at specific milestones	Key stakeholders are regularly involved		Key stakeholders are continuously involved
Risk and cost are controlled by detailed planning of mostly knowable considerations	Risk and cost are controlled by progressively elaborating the plans with new information		Risk and cost are controlled as requirements and constraints emerge

Source: PMI (2017 &2021), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)

Figure 4. Project Life Cycle

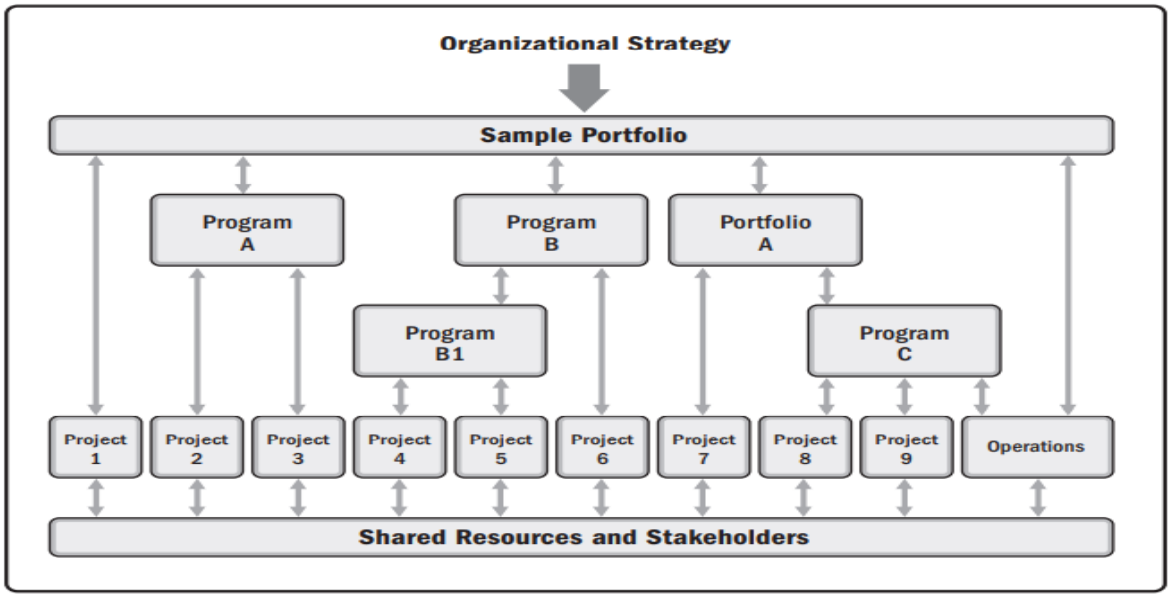


Source: PMI (2021), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)

2.3.7 Company strategy, portfolios, programs and projects

Knowing that this is a large-scale and multi-dimensional project, LINEON group does not have the necessary resources to carry out this project alone. This is how partnerships are developed with other institutions in the field and also with the Haitian State which has a major role to play in this field because this project can help the State to eliminate slums in Haiti and help people to live freely, without constraint. As mentioned above, this project will be under the responsibility of the Director of the project real estate project. The PMBOK Guide describes the company strategy, portfolios, programs and project management as summarized in the following figure(figure 4).

Figure 5: Company strategy, portfolios, programs and project



Source: PMI (2017), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition.

3 METHODOLOGICAL FRAMEWORK

3.1 Information sources

According to the National Institute of Open Schooling (2012), the term "information" refers to facts, conclusions, ideas and creative works of the human intellect and imagination that have been formally or informally communicated and may be transported, stored or shared. Thus, the sources of information designate everything that makes it possible to obtain information.

At a first level, information sources can be divided into documentary and non-documentary information sources. Documentary information sources are, unlike non-documentary information sources, recorded and may or may not be published, printed or in electronic form. Thus, a subdivision of documentary information sources makes it possible to distinguish primary information sources from secondary information sources (NIOS, 2012).

3.1.1 Primary sources

Primary sources of information provide original information that is presented for the first time, that is, raw data related to new discoveries or new information that actually occurred without any interpretation or commentary (NIOS, 2012). These may include theses, dissertations, scholarly journal articles (based on research), government reports, symposia and conference proceedings, photographs, speeches, letters, memos, personal accounts, diaries, interviews and correspondence... For the development of this FGP, the main primary sources of information that will be used are:

- Minutes of meetings

- Communications via email or phone call
- books,
- reports from governments and other organizations,
- research articles from journals and websites.

3.1.2 Secondary sources

Considered second-hand information, secondary sources are generally developed from primary sources and include commentaries, interpretations or discussions of the original material. Thus, the existence of secondary sources of information mainly depends on the primary sources of information, since they only aim to facilitate knowledge or access to information from the primary sources and generally include index type/summary, type of survey, reference works, technical translations, ... (NIOS, 2012). In this FGP, the secondary sources will be:

- newspaper articles,
- thematic dictionaries and encyclopedias,
- biographies,
- editorials
- and opinion pieces from newspapers.

Chart 1. Information sources (own creation)

Objectives	Information sources	
	Primary	**Secondary**
Create a project charter to define the key input elements required to develop the project management plan.	Reports from governments and other organizations. Organization data base	Brainstorming in inside project sponsor team PMBOK® Guide 6th and 7th Edition (PMI, 2017, 2021)
Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.	Minutes of meetings, books	PMI standards
Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.	Minutes of meetings	Historical information PMBOK® Guide 6th and 7th Edition (PMI, 2017, 2021)
Develop a Cost Management Plan to plan, estimate, and manage the budget for all project activities, deliverables and resources.	Meetings, books, Communications via email or phone call	Organization data PMBOK® Guide 6th and 7th Edition (PMI, 2017, 2021)
Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.	Meetings, books, Government reports	Historical information PM Standards
Develop a Resource Management Plan to identify, acquire and manage all physical and human resources needed to complete the project successfully.	Meetings, books	Historical data PMI Standards
Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.	Organization's documentation Meetings, books,	Web information PMI Standards
Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.	Meetings, books, reports from governments and other organizations	PMBOK® Guide 6th and 7th Edition (PMI, 2017, 2021)
Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by the project and ensure that their expectations are understood, recorded and considered throughout the project life cycle.	Face-t-face and online meetings	Historical information
Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development	Books, reports from governments GPM organizations	PMBOK® Guide 6th and 7th Edition (PMI, 2017, 2021)

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation

3.2 Research methods

In order to collect the data necessary for scientific research, it is necessary to identify the appropriate methods, i.e., the specific procedures for collecting and analyzing data, which vary according to the field and the objective of the research. More specifically, the term "research methods" refers to the strategies, processes or techniques used in the collection of data or evidence for analysis in order to discover new information or create a better understanding of a topic (NIOS, 2012).

3.2.1 Types of research basing on types of data.

It is important to distinguish three main types of research methods that use different data collection techniques.

- **The qualitative method** that aims to help researchers better understand complex concepts, social interactions or cultural phenomena by focusing on data relating to lived experiences, emotions or behaviors, and the meanings that individuals attach to them.
- **The quantitative method** helps to discover patterns or relationships and to make generalizations by gathering numerical data that can be classified, measured or categorized by statistical analysis.
- **Mixed methods** which provide a holistic approach combining and analyzing statistical data with deeper contextualized information for triangulation, or verification, of data from two or more sources.

3.2.2 Types of method basing on research objective

- **Analytical method** which involves critical thinking skills and the evaluation of facts and information relating to current research.
- **Descriptive method** that aims to describe a population, situation or phenomenon studied by answering the questions how, what, when and where if a research problem, rather than why.

Chart 2. Research methods (Own creation)

Objectives	**Research methods**
	Qualitative research method
Create a project charter to define the key input elements required to develop the project management plan.	Face-to-face meetings to find information required to describe the basic elements about the project
Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.	Brainstorming and other discussion will be conducted to analyze required data relating to the project scope
Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.	Historical data will be analyzed to facilitate the description required data relating to the project schedule
Develop a Cost Management Plan to plan, estimate, and manage the budget for all project activities, deliverables, and resources.	Meetings and other discussion will be conducted to analyze required data relating to the project cost
Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.	Face-to-face meetings to analyze required data relating to the project quality
Develop a Resource Management Plan to identify, acquire and manage all physical and human resources needed to complete the project successfully.	Historical data relating to the project scope will be analyzed to develop a sold resource management plan
Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.	Observation and interviews to properly develop the project communication plan
Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.	Existing data relating to the project scope will be analyzed to facilitate the development an adapted risk management plan
Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by the project and ensure that their expectations are understood, recorded and considered throughout the project life cycle.	Face-to-face meetings, Interviews and historical to analyze required data relating to the project scope and to properly manage the

Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development to minimize and if possible, eliminate any processes, resources or outcomes that could cause further harm to the environment.	GPM report and PMI standards will be analyzed through brainstorming and other discussion to describe the project impact relating to the principles of regenerative development

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

3.3 Tools

According to PMI (2017 & 2021) in the PMBOK Guide, tools refer to "something tangible, such as a template or software program, used in performing an activity to produce a product or result ". Generally used to facilitate the measurement of a variable or the collection of information needed to answer a research question, data collection or research tools are devices or instruments that help a researcher achieve their goals and save time. As a Project management Plan, in this FGP, Expert judgement, meetings, Data analysis will be the main tools to be used to achieve the project objectives, as resumed in the following Chart. (PMI, 2017 &2021)

Chart 3. Research tools (PMBOK Guide, 2017)

Objectives	Tools
Create a project charter to define the key input elements required to develop the project management plan.	-Data gathering, - Expert Judgement, - Meetings
Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.	- Meetings, - Data analysis - Expert Judgement,
Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.	- Expert Judgement, - Project management software
Develop a Cost Management Plan to plan, estimate and manage the budget for all project activities, deliverables, and resources.	- Meetings - Expert Judgement, - Data analysis
Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.	- Expert Judgement, - Meetings
Develop a Resource Management Plan to identify, acquire, and manage all physical and human resources needed to complete the project successfully.	- Expert Judgement, - Historical data analysis - Meetings
Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.	- Communication technologies - Expert Judgement, - Meetings
Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.	- Data analysis - Expert Judgement, - Meetings
Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by the project and ensure that their expectations are understood, recorded and considered throughout the project life cycle.	- Data gathering - Expert Judgement - Meetings
Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development to minimize and if possible, eliminate any processes, resources or outcomes that could cause further harm to the environment.	- Data analysis - Expert Judgement, - Meetings

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

3.4 Assumptions and constraints

Assumptions refer to expected events or circumstances during the life cycle of your project, i.e., what is believed to be true, but may not turn out to be true in the end. They are essential in the context of the development of a project, in particular to comply with the PMBOK Guide. While constraints refer to the limitations, in terms of budget, schedule or resources imposed on the project. The main assumptions and constraints for this FGP are summarized in the following chart.

Chart 4. Assumptions and constraints (PMBOK Guide, 2017 & 2021)

Objectives	Assumptions	Constraints
Create a project charter to define the key input elements required to develop the project management plan.	The project charter will provide all basic information to be developed in the PMP	Insufficient time to develop the project charter because only 3 months is available for the whole process.
Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.	The project scope management plan will define the exact scope of the project	Due to multiple environmental factors, the scope could be changed and impacted the project execution plan
Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.	The project schedule will be clearly described relating to the project scope	All the required information required to develop the project schedule plan may be unavailable
Develop a Cost Management Plan to plan, estimate, and manage the budget for all project activities, deliverables and resources.	Project budget will be properly developed and kept on track during project execution	Precarity of the economic situation in Haiti, specifically the inflation could increase the project cost
Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.	All project quality and standards will be clearly described	Some stakeholders and costumers may contest the project quality
Develop a Resource Management Plan to identify, acquire and manage all physical and human resources needed to complete the project successfully.	The appropriated staff and other resources will be identified	Lack of resource in local community may affect the project execution and delivery.
Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.	The project communication management plan will facilitate a fluid communication during project execution	Project staff may not apply the PCMP completely.
Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.	Most relevant project risks will be identified in the project risk management plan	Unidentified risk may occur and impact the project cost, schedule and delivery.
Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by the project and ensure that their	Most relevant project stakeholders will be	Some relevant stakeholders may not

Objectives	Assumptions	Constraints
expectations are understood, recorded and considered throughout the project life cycle.	identified and described	involve enough in the project execution.
Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development to minimize and if possible, eliminate any processes, resources or outcomes that could cause further harm to the environment.	The P5 analysis will ensure a sustainable approach in the project execution	Sustainable approach may be misunderstood by some stakeholders and project team.

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

3.5 Deliverables

According to the PMBOK Guide (PMI, 2017) « 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. And a deliverable can be tangible or intangible. In this FGP, the deliverables are summarized in Chart 5.

Chart 5. Research deliverables (PMBOK Guide, 2017)

Objectives	Deliverables
Create a project charter to define the key input elements required to develop the project management plan.	Project Charter
Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.	Scope management plan
Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.	Schedule Management Plan
Develop a Cost Management Plan to plan, estimate and manage the budget for all project activities, deliverables and resources.	Cost management plan
Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.	Quality management plan
Develop a Resource Management Plan to identify, acquire and manage all physical and human resources needed to complete the project successfully.	Resource management plan
Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.	Communication Management plan
Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.	Risk Management Plan
Conduct a P5 Impact Analysis to ensure that the project actively complies with the principles of sustainable development to minimize and if possible, eliminate any processes, resources or outcomes that could cause further harm to the environment.	P5 Analysis

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4 RESULTS

4.1 Project charter

As defined in the PMBOK Guide (PMI, 2017 & 2023) a project charter is an executive document to formally authorize the initiation of a project or phase, and to the documentation of the initial requisites of the project and expectations of the stakeholders. This is project charter o**f** the LINEON Village Project.

<table>
<tr><th colspan="3">PROJECT CHARTER</th></tr>
<tr><td>Date</td><td colspan="2">Name of Project</td></tr>
<tr><td>07/07/2025</td><td colspan="2">LINEON village: A social housing project in the northern region of Haiti</td></tr>
<tr><td>Type of project:</td><td colspan="2">Predictive</td></tr>
<tr><td>Knowledge areas / process groups</td><td colspan="2">Application area (Sector / Activity)</td></tr>
<tr><td>– Knowledge areas:
scope, time, cost, quality, resource communications, risk, stakeholder
– Processes:
Initiating, planning, executing, Monitoring and control, closing</td><td colspan="2">Construction (Social housing)</td></tr>
<tr><td>Tentative start date</td><td>Tentative completion date</td><td>Duration (months)</td></tr>
<tr><td>July 2025</td><td>July 2030</td><td>60</td></tr>
<tr><td colspan="3">Project objectives (general and specific)</td></tr>
<tr><td colspan="3">General objective
To develop a social and participatory housing project in the northern region of Haiti of forty (40) buildings from 2025 to 2030

Specific objectives
1. To build 1120 apartments by 2030
2. To build basic infrastructures such as: access road, portable water, electrical system for every house by 2028
3. To build other infrastructures such as: park and green space, sport center… by 2030
4. To establish a sanitation system to clean the city and repair existing infrastructures as needed by 2030
5. To build premises for fire brigade and National police by 2030</td></tr>
</table>

Justification or purpose of the project (Contribution and expected results)
According to Amnesty International (2015), since before the January 2010 earthquake, the housing sector in Haiti was already in crisis, as the country lacked approximately 700,000 homes and 250,000 homes were destroyed or heavily damaged by the earthquake. Due to the country's precarious economic situation for decades, people no longer want to live in the countryside and are heading to the capital Port-au-Prince or other major cities in the hope of finding opportunities or services not available in the countryside. Thus, these cities have become more and more overcrowded slums with anarchic constructions, even in areas with a tourist vocation or upgraded neighborhoods. Social housing projects with constructions respecting seismic standards and basic infrastructures are more and more necessary in Haiti, particularly in the Northern region in order to facilitate low-income people to stay in houses with modern comfort and at the same time fight against the slum phenomenon. This project intends to create housing for 5000 people by 2030 in a modern village with all required infrastructures such as road, electricity, water, security building.

Description of the product or service that the project will generate - Final project deliverables
1. 1120 apartments 2. All basics infrastructures built: connexon road, potable water, electrical system, … 3. Park and green space, 4. 1 modern sport center 5. Existence of a sanitation system 6. Premises for a fire brigade & national police

Assumptions
- Government and local authorities will provide the land required for the project implementation - All resources will be available; - All government entities are ready to collaborate for signing all documents and contracts; - All the local stakeholders are ready to be involved in the project. - Political climate will be stable and not disturb the project process of implementation;

Restrictions
- LINEON Village is the first major real estate project to be developed by this organization, so not enough experience - The project is planned to be executed in 5 years - The economic situation of the country is precarious, which could affect the ability of the desired people to pay - All infrastructure to be built must comply with international anti-seismic standards because the region is at seismic risk

Preliminary identification of risks
– As a result of a lack of experience of LINEON Group in the implementation of big real estate projects, it could be more difficult to achieve the project deliverables as planned. – As a result, lack of definition in the scope of the project for several deliverables, rework may occur, which could delay the completion of the deliverable and increase its cost, impacting the duration and cost of the project. – Due to price instability in the market, including the deterioration of the value of the local currency, the overall cost of the project may require upward adjustments. – As a result of a lack of communication between designers and builders, construction practices that allow optimal use of materials may not be considered, which could impact the cost of the deliverable. – By the fact that it is an innovative project model, because social housing projects are generally financed by the State, it is possible to come up against a lack of understanding of the population which can delay the start of project activities. – Due to the absence of a national cadaster, it is possible that the land made available by the authorities may be the subject of conflicts that could impact the overall implementation of the project.

General resources and budget

Deliverable	Resource	Unit	Amount	Unit cost	Total cost
Apartments	Human, equipment, supplies, contracting	USD	1908.93	26000	21380000
Road connection	Human, supplies and contracting	km	15	400000	6000000
Park and green space	Human, supplies and contracting		1	800000	800000
Modern sport center	Human, supplies, contracting		1	2050000	2050000
Sanitation system	Human, supplies, contracting		1	1450000	1450000
Premises for fire brigade and national police	Human, Supplies, contracting		1	600000	600000
Utilities and other cost					7150000
				TOTAL	39430000

Milestones schedule

Establish the completion date of each second-level deliverable as a milestone. Remember that a milestone is a control point that is related to a deliverable (acceptance, signature, presentation, official delivery, approval).

Milestone name	End date
Apartments	July 2030
Road connection	July 2030
Park and green space	July 2030
Modern sport center	July 2030
Sanitation system	July 2030
Premises for fire brigade and national police	July 2030
All basic infrastructures	July 2030

Relevant historical information

Created in 2018, LINEON Group is a young company that strives to be a key player in the real estate market that makes real estate transactions possible in the 145 cities of Haiti and in some cities of the Dominican Republic from all over the world.

But, the development of a large real estate project for the benefit of people with low incomes, was the basis of the creation of the company. And it is in this perspective that LINEON Group will be the main promoter of this social housing project which will indeed require a large contribution from the Haitian government.

Identification of groups of interest (stakeholders)

Types	Stakeholders	Role	Expectations
Direct	LINEON group	Project sponsor	The project delivers intended business benefits/values within budget and on schedule.
	Clients	Project beneficiary	The project provides the deliverables as promised
	National and local authorities	Regulator/ Support	The project will help to fighting slum in the northern region
	Construction companies	Contractor	They will find benefit contract in the execution of the project
	Engineers, Lawyers and Notaries	Services provider	They will find contracts to provide legal assistance in the project execution
	Dieulin Napoleon	Project manager	Have full support of project sponsor and client to utilize the necessary resources to deliver the project successfully
	Other project team members	Project team member	Support the project manager in the delivery of project objectives and milestones along the project process lifecycle

Indirect	Ministries-in-concern, e.g. Transport Ministry, Finance Ministry, Environment Ministry, Housing & Urban Planning Ministry, and Labor Ministry	Regulator	Ensure the development of the project is designed and implemented in a way that maximizes socioeconomic benefits, including the enhancement of physical infrastructure, job creation, and the minimization of adverse impact on citizens, local communities and the environment.
	General population	Beneficiaries	Job and other opportunities
	Media and Interest groups	Informational Education Sensitization Awareness	Contracted to advertise, sensitive and raise awareness on the benefits of the project

Napoleon Dieulin (project manager):	Dieulin Napoleon
Name and title of the authorizing person (:	**Signature:**

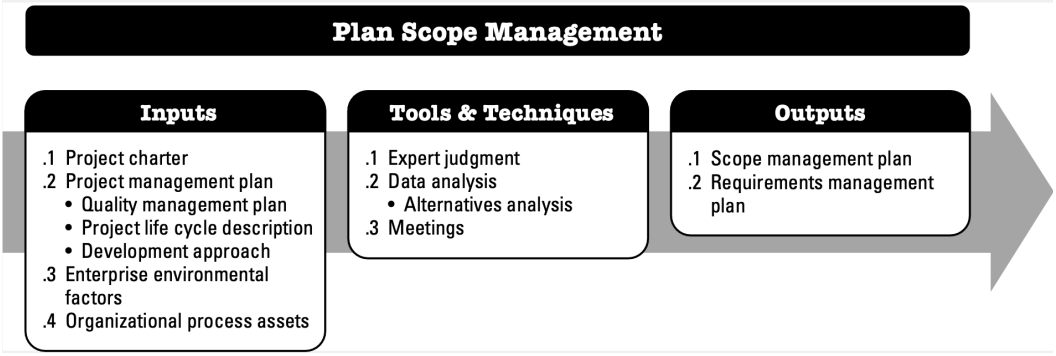
4.2 Scope Management plan

4.2.1 Introduction

As part of this project focusing on social and participatory housing in northern Haiti, this scope management plan documents the scope management approach, defines roles and responsibilities, processes and scope management procedures and serves as a guide for project scope management and control.

According to the PMBOK guide, the scope management plan is the planning stage of project scope management that helps ensure that the project includes all the work required, and only the work required, to complete the project. In other words, project scope management primarily involves defining and controlling what is and is not included in the project. As all project management activities, the figure 5 show the inputs, tools & techniques, and outputs of the plan scope management (PMI, 2021).

Figure 6. Plan scope management: Inputs, Tools &techniques, and outputs



Source: PMI (2017), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition

4.2.2 Role and responsibilities

This table presents the main stakeholders involved in managing the scope of the project, the role and responsibilities regarding to the project scope management.

Chart 6. Role and responsibilities in the project scope management

Name	Role	Responsibility
LINEON group	Project Sponsor	• Approves Scope Management Plan. • Provides high-level scope definition (Project Charter). • Reviews escalated scope issues and provide direction for resolution. • Approves major scope change requests. • Overall decision-making responsibility for Scope Management activities.
Dieulin Napoleon	Project Manager	• Overall responsibility for scope management. • Oversees the development of the Scope Management Plan. • Oversees the scope change management process. • Approves scope change requests within his/her authority. • Escalates scope and change issues. • Ensures that scope changes are incorporated into appropriate project documents
Peterson Napoleon	Contract Manager	• May have a role in deliverable verification and acceptance when the deliverable is required under contract terms.
Team member	Project Team Members and Subject Matter Experts	• Help develop the project scope statement. • Submit scope change requests. • Review Scope Change requests when assigned. • Provide feedback as and when required. • Participate in team-level scope change reviews.
Engineers, Lawyers and Notaries	Independent Verification and Validation (IV&V)	• Provides an ongoing independent review and analysis of project scope management practices. • Monitors scope changes and provide feedback.

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.2.3 Scope Management Processes

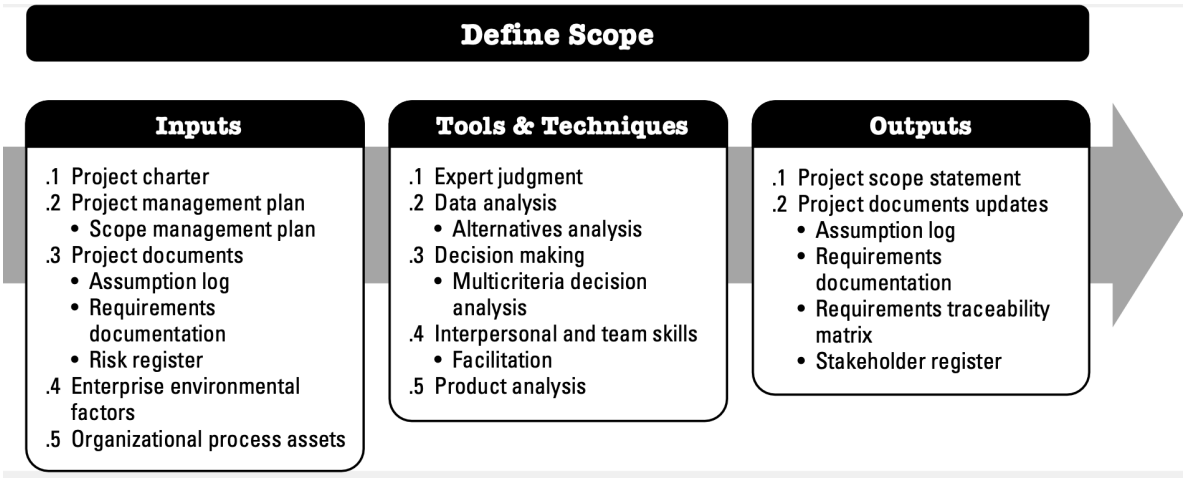
The scope management processes interact with each other and with other processes included in the Project Management Plan, and if well designed and implemented, scope management processes will help to effectively manage the elements of the triple constraint of time, schedule and cost to support a high-quality project. As a reminder the Project Scope Management processes are:

- Plan Scope Management- The process of creating a scope management plan that documents how the project and product scope will be defined, validated and controlled.
- Collect Requirements- The process of determining, documenting, and managing stakeholders' needs and requirements to meet project objectives.
- Define Scope The process of developing a detailed description of the project and product.
- Create WBS The process of subdividing project deliverables and project work into smaller, more manageable components.
- Validate Scope The process of formalizing acceptance of the completed project deliverables.
- Control Scope The process of monitoring the status of the project and product scope and managing changes to the scope baseline.

4.2.3.1 Definition of scope. It is important to clearly state the scope of the project in order to detail the deliverables and the work required to create these deliverables. Based on the project charter information, this process presents the high-level description of the product, service or result boundaries and acceptance criteria.

And as it is mentioned in the PMBOK Guide (2017), "Define Scope is the process of developing a detailed description of the project and product". The figure 6 provides a depiction of the inputs, tools and techniques, and outputs of this process.

Figure 7. Define Scope: Inputs, Tools &techniques and outputs



Source: PMI (2017), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition

4.2.3.1.1 ***Scope summary.*** Faced with the worsening economic precariousness of the country and the problems of shanty towns and land conflicts in the major cities of Haiti, in particular the city of Cap-Haitien, this project aims to create a modern village through a participatory fund set up in through installment payments.

Nowadays, it is very expensive and very difficult to build the house of your dreams on your own. The price of renting an apartment is increasingly high, which makes it difficult to build up the funds necessary to build a house alone, especially when you already have a family with children.

Initiated by LINEON Group, a company that currently offers services in the field of real estate, consists of the construction of LINEON Village: a modern village of forty (40) houses of seven (7) floors.

To develop this project, LINEON Group plans to approach the competent authorities to find a plot of approximately (6) hectares of land and an institution to finance the project. Then the potential beneficiaries will be contacted for the first arrangements on the terms of payment and the implementation phase of the project can be undertaken. It is a project that spans 5 years, from 2025 to 2030.

It is obvious that this is an innovative project that will have to face the old mentality that mass housing projects are generally implemented by the government especially after disasters, thanks to the financing of NGOs. In addition, the economic situation is really catastrophic which can reduce the ability of a large majority to participate.

4.2.3.1.2 ***Project objectives.*** This project aims to develop a social and participatory housing project in the northern region of Haiti for at least 5000 people from 2025 to 2030. But specifically, the main objectives of this project are:

- To build and sell 40 houses of seven floors by 2030
- To build basic infrastructures such as: road, potable water, electrical system for every house by 2028

- To build other infrastructures such as: 1 park and green space, sport center… by 2030
- To establish a sanitation system to clean the village and repair existing infrastructures as needed by 2030
- To build premises for a fire brigade and National police corps by 2030

4.2.3.1.3 ***Product Scope Description and deliverables.*** This project aims to build a modern village of forty (40) buildings for a total of 1120 apartments and all basic infrastructures as presented in the following chart:

Type of buildings	Building of seven (7) floors including four (4) apartments by floor. But each apartment will have the same characteristics
Characteristics of each apartment	- 150 to 200 sq m - Three bedrooms, - Three (3) bathrooms, - 1 Dining room, - 1 living room - 1 kitchen
Infrastructures required	- Road - Electricity available 24/7 - Potable water available - one (1) Sanitation system - one (1) Fire Brigade building and National police building - one (1) Attraction Park and green space in different area - one (1) Sport center

Figure 8. Overview of buildings design of a part of LINEON Village (own creation)

Note: Design by HPCADE Services for LINEON Group: a part of LINEON Village

4.2.3.1.4 ***Product Acceptance Criteria.*** To be accepted as complete, all the forty 40 buildings and infrastructures must comply with the characteristics described in the product description.

4.2.3.1.5 ***Project Exclusions.*** This project doesn't include the management of the hospital, the supermarkets and the police station to be built. The project included only the construction of the buildings required. The project does not include the acquisition and installation of furniture for the apartments, as the project is simply the construction of the buildings with the necessary appropriate preparations.

4.2.3.1.6 Project Constraints.

- LINEON Village will be the first major real estate project to be developed by this organization, so not enough experience
- The project is planned to be executed in 5 years

- The economic situation of the country is precarious, which could affect the ability of the desired people to pay
- All infrastructure to be built must comply with international anti-seismic standards because the region is at seismic risk

4.2.3.1.7 Project Assumptions

- Government and local authorities will provide the land required for the project implementation
- All resources will be available;
- All government entities are ready to collaborate for signing all documents and contracts;
- All the local stakeholders are ready to be involved in the project.
- Political climate will be stable and not disturb the project process of implementation;

4.2.3.2 Creation of the Work Breakdown Structure (WBS) and Dictionary.

According to the PMBOK Guide (2017) "Create WBS" is the process of subdividing project deliverables and project work into smaller, more manageable components. Performed once or at predefined points in the project, the process of creation of the WBS provides a framework of what has to be delivered. For this project, figure 7 provides the main components of the WBS for the whole project life cycle and chart 7 presents the WBS Dictionary.

Figure 9. The Work Breakdown structure of the project (own creation)

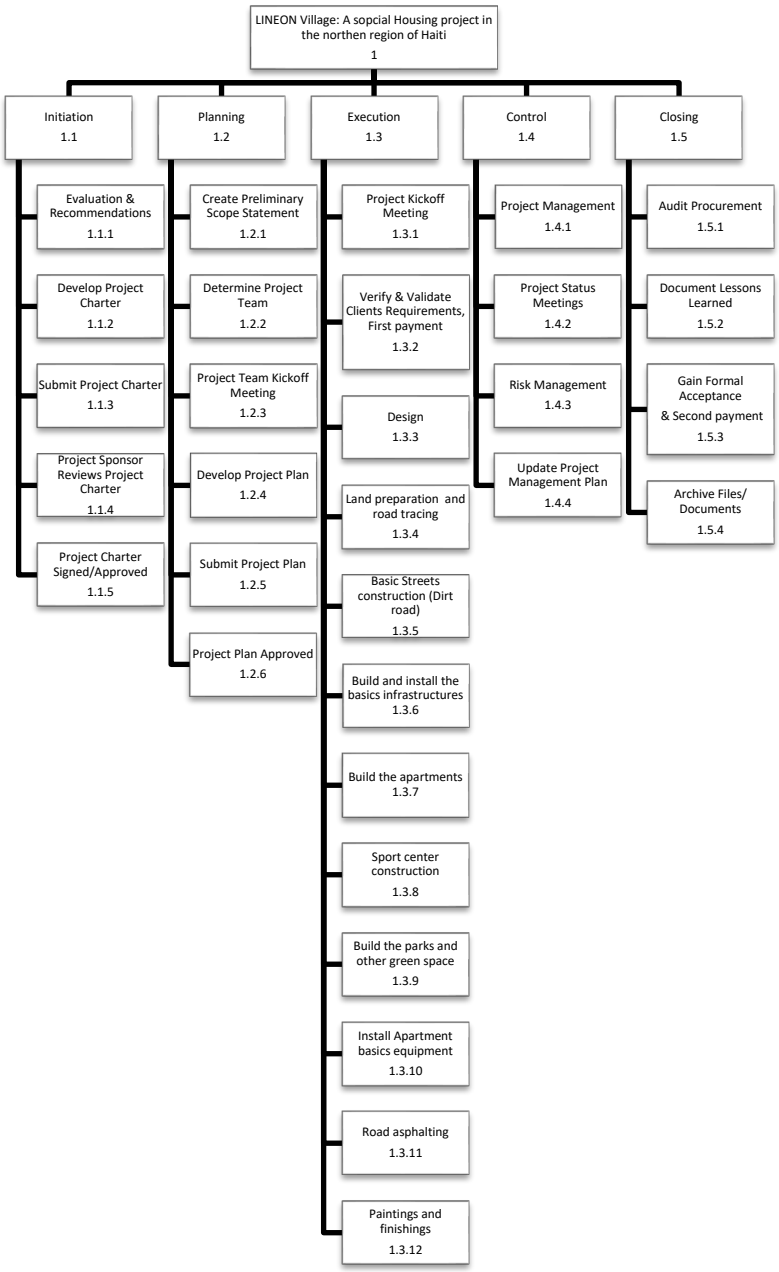


Chart 7: The WBS Dictionary (Own creation)

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
1	*1*	Construction of a modern village of 40 houses of seven floors with modern infrastructures	Execution of activities required to complete the project	40 houses of seven floors of 4 apartments each floor and all required infrastructures	Project Manager Contractor Technical Analyst
2	*1.1*	Initiating			
3	*1.1.1*	Evaluation and recommendations	Evaluation of options and recommendations	Evaluation and Recommendations Report	Project Manager Business Analyst
	1.1.2	Develop Project Charter	Develop the content of the project charter	Project charter	Project Manager Business Analyst
	1.1.3	Submit Project Charter	Project charter submission	Project charter approval	Project manager
3	1.1.4	Project Sponsor Reviews Project	Reviewing the project charter content	Review report	Project manager
3	1.1.5	Project Charter Signed and Approved	Signing and approbation	Signed project charter	Project manager
3	1.1.6	Meet Financial institution and government	Meetings and discussion	Financial agreements and land authorization documents	Project manager
2	1.2	Planning			
3	1.2.1	Create Preliminary Scope Statement	Create scope management plan	Scope management plan	Project manager/
3	1.2.2	Determine Project Team	Identify all project team characteristics	Project team	Project manager
3	1,2,3	Project Team Kickoff	Discussion about the project	Meeting report	Project manager/Project team

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
3	1.2.4	Develop Project Plan	Project process development	Project plan	Project manager/Project team
3	1.2.5	Submit Project Plan	Project plan submission	Document submitted	Project manager
3	1.2.6	Project Plan Approval	Project plan Approbation	Project plan approved	Project manager
2	1.3	Executing			
3	1.3.1	Project Kickoff Meeting	Discussion about the project	Meeting report	Project manager/Project team
3	1.3.2	Verify & Validate Clients Requirements & first payment	Meetings with clients	Requirement validation and first payments received	Project manager/project team
3	1.3.3	Design	Design activities	Architectural plan	Expert /Project manager
3	1.3.4	Land preparation and road tracing	Basic activities required before starting construction	Clean spaces and road traced	Contractor employees
3	1.3.5	Basic Streets construction (Dirt Road)	Dirt road construction activities	Street constructed	Contractor employees
3	1.3.6	Build and install the basics infrastructures	Install construction equipment; Digging and installation of wells to find the water needed for the construction works	Water available and equipment installed	Contractor employees
3	1.3.7	Build the apartments	Construction activities relating to the apartments	2000 apartments built	Contractor employees
3	1.3.9	Sport center construction	Construction activities relating to the sport center construction	Sport center including football, basketball, tennis, volleyball, swimming pool, and gym	Contractor employees

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
3	1.3.9	Build the parks and other green space	All activities construction relating to a park construction and green spaces	Park built and green spaces	Contractor employees
3	1.3.10	Install Apartment basics equipment	Equipment installation activities	All basic equipment installed in the 2000 apartment	Contractor employees
3	1.3.11	Road asphalting	Road asphalting activities	All street and road asphalted	Contractor employees
3	1.3.12	Paintings and finishings	Painting and finishing activities	All painting and finishing activities completed	Contractor employees
2	1.4	Monitoring and Control			
3	1.4.1	Project Management	Follow-up activities during the project execution	Periodic Reports	Project team
3	1.4.2	Project Status Meetings	Meetings/brainstorming	Reports	Project team/Contractor team
3	1.4.3	Risk Management	Risk management activities	Reports	Project team
3	1.4.4	Update Project Management Plan	Follow-ups in project management plan	Project documents updated	Project team
2	1.5	Closing			
3	1.5.1	Audit Procurement	Audit procurement activities	Procurement documents	Project team
3	1.5.2	Document Lessons Learned	Meetings and brainstorming activities	Lessons learned documented	Project team
3	1.5.3	Gain Formal Acceptance & Second payment	Meetings with clients Acceptance document signature Second payment by each client Delivery activities	Document signed Second payment received	Project team
3	1.5.4	Archive Files/ Documents	Archiving documents activities	All document archived	Project team

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.2.3.3 Deliverable Validation and Acceptance. The project's deliverables and products will be accepted through the project's formal acceptance processes. These processes are designed to ensure that individual deliverables and products are accepted only if they meet their respective acceptance criteria.

4.2.3.4 Control Scope. Any request for change in project scope will be processed through the project's change management procedure. Proposed scope changes will be reviewed. If the Project Manager and Project Sponsor determine that the request has merit, it will be analyzed for its impact to project time and project costs, and a risk assessment of the scope change will be conducted. If the change is approved, the project's WBS and WBS dictionary will be updated and re-baselined, the project schedule will be updated and may be re-baselined, and the project's requirements set will be updated.

4.3 The schedule management plan

4.3.1 Introduction

The project management institute (2017, 2021) define the project schedule management as the processes required to manage time during the completion period of the project. In other words, it focuses on the definition and sequencing of all interests mainly based on the desired final key of precise deliverables, estimation of aid, length, development of the agenda and management. As described in figure 8, the Schedule Management planning is one of the processes that establishes the policies, procedures and documentation for planning, developing, managing, executing and controlling the project schedule. Developed from the approved work breakdown structure (WBS) constructed as part of the Scope Management planning effort, this project management will cover the following points:

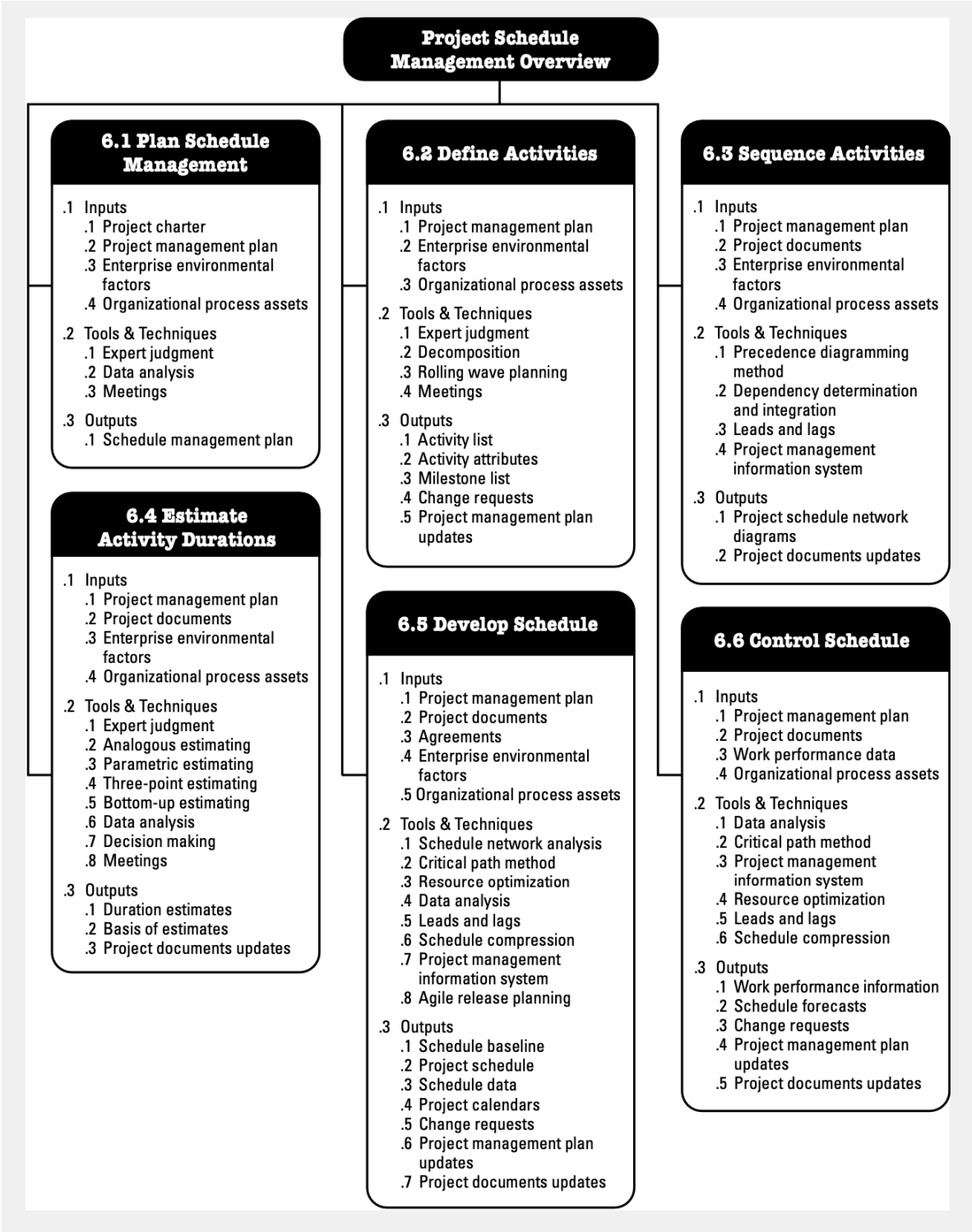
- Activity definition, to identify and document the specific actions to be performed to produce the project deliverables;
- Activities sequence, to identify and document relationships among the project activities;
- Activity durations estimate, to estimate the number of work periods needed to complete individual activities with the estimated resources;
- Schedule development, the process of analyzing activity sequences, durations, resource requirements, and schedule constraints to create the project schedule model for project execution and monitoring and controlling.
- Control Schedule The process of monitoring the status of the project to update the project schedule and manage changes to the schedule baseline.

4.3.2 Schedule management: Tools and techniques

The tools and techniques to be used on the schedule management of this project are:

- Software such as MS Project, Timesheet, MS Excel, MS Word, MS PowerPoint, etc. will be used to utilize the tools and techniques that will develop and monitor this schedule management plan;
- To do list - capture all actions that you need to take in the near- to mid-term to meet your commitments and goals;
- Weekly review - will help make sure you focus some of your time on important tasks. From the to do list choose activities you need to focus on this week.
- Schedule baseline - a baseline captures the project schedule plan, so you can compare the plan to your actual progress;
- Historic data - gives you a clearer picture of how much time you could expect to spend on a similar past task;
- Gantt chart - start to finish plans which will show task dependencies and milestones to create a critical path for the project.

Figure 10. Project Schedule management Overview



Source: PMI (2017), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition

4.3.3 Activity list, sequencing and Duration

The activity list includes all the tasks required to obtain the deliverables that have been included in the WBS for the project. The importance of this process is high as the initial estimates for duration are included and the relationship between activities is established to determine the project network scheme and understand how the project will be executed.

The project manager can use this tool to plan accordingly and schedule activities and resources to be developed in parallel or level resources that may be scarce during project execution.

Chart 8: Activity list: coding, activity name, predecessor/successors list, duration

ID	ACTIVITY NAME	ACTIVITY BRIEF DESCRIPTION	PREDECESSOR	SUCCESSOR	DURATION (days)
1.1.1	Preliminary studies	Evaluation of options and recommendations		1.1.2	60
1.1.2	Develop Project Charter	Develop the content of the project charter	1.1.1	1.1.3	30
1.1.3	Submit Project Charter	Project charter submission	1.1.2	1.1.4	1
1.1.4	Project Sponsor Reviews Project charter	Reviewing the project charter content	1.1.3	1.1.5	30
1.1.5	Project Charter Signed and Approved	Signing and approbation	1.1.4	1.1.6	5
1.1.6	Meet Financial institution and government	Meetings and discussion	1.1.5		120

1.2.1	Create Preliminary Scope Statement	Create scope management plan	1.1.5	1.2.2	30
1.2.2	Determine Project Team	Identify all project team characteristics	1.2.1	1.2.3	60
1.2.3	Project Team Kickoff	Discussion about the project	1.2.2	1.2.4	30
1.2.4	Develop Project Plan	Project processes development	1.2.1	1.2.5	120
1.2.5	Submit Project Plan	Project plan submission	1.2.4	1.2.6	5
1.2.6	Project Plan Approval	Project plan Approbation	1.2.5	1.3.1	20
1.3.1	Project Kickoff Meeting(executing)	Discussion about the project execution	1.2.6	1.3.2	30
1.3.2	Verify & Validate Clients Requirements & first payment	Meetings with clients	1.2.6	1.3.3	160
1.3.3	Design & Architecture	Design activities	1.3.2	1.3.4	120
1.3.4	Land preparation and road tracing	Basic activities required before starting construction	1.3.3	1.3.5	100
1.3.5	Basic Streets construction (Dirt road)	Dirt road construction activities	1.3.4	1.3.6	120
1.3.6	Build and install the basics infrastructures	Install construction equipment; Digging and installation of wells to find the water needed for the construction works	1.3.4	1.3.7	120
1.3.7	Build the apartments	Construction activities relating to the apartments	1.3.4	1.3.14	380

1.3.8	Sport center construction	Construction activities relating to the sport center construction	1.3.4	1.3.14	100
1.3.9	Build Sanitation system	Construction activities relating to the sanitation system	1.3.2 1.3.3 1.3.4	1.3.14	100
1.3.10	Build premises for fire Brigade and National police	Construction activities relating to fire brigade building	1.3.2 1.3.3 1.3.4	1.3.14	100
1.3.11	Build the parks and other green space	All activities construction relating to a park construction and green spaces	1.3.6	1.3.14	200
1.3.12	Install Apartment basics equipment	Equipment installation activities	1.3.7	1.3.14	60
1.3.13	Road asphalting	Road asphalting activities	1.3.10	1.3.14	100
1.3.14	Paintings and finishings	Painting and finishing activities	1.3.7 1.3.8 1.3.9 1.3.10 1.3.11 1.3.12	1.4.1	120
1.4.1	Document Lessons Learned	Meetings Data analysis	1.3.14		
1.4.2	Gain Formal Acceptance & Second payment	Meetings and brainstorming activities	1.3.14		
1.4.3	Archive Files/ Documents	Meetings with clients Acceptance document signature Second payment by each client Delivery activities	1.3.14		

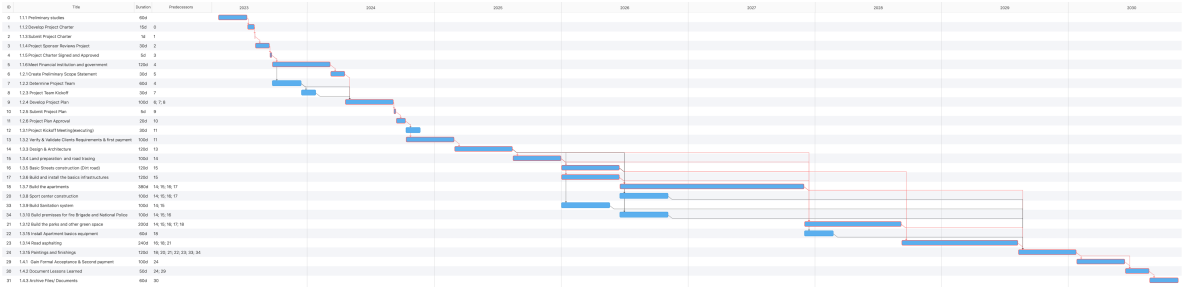
Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.3.4 Project schedule and critical path

4.3.4.1 Process description and importance. Developing the project schedule is of utmost importance for all activities regarding project management. Once a project schedule is established, the project schedule baseline is determined and all changes will require to be handled by the Change Control Process. The estimates calculated in the activity list are added up, and the relationship between processes including the predecessors and successors is used to determine the critical path for the project that will establish the total project duration. Activities in the critical path have to be given additional focus since any delay on these activities will delay the whole project. The activities were included in the scheduling software Microsoft Project.

4.3.4.2 Project schedule in MS Project or any other scheduling software. The program activities have been incorporated into project office X file. The following is the GANTT chart generated.

Figure 11. GANTT Chart (own creation)



Source: Prepared in Project office X using project data

4.3.4.3 Critical path (showed on the project schedule). It includes a series of tasks that controls the calculated start or finish date of the project. For the LINEON Village Project the critical path is shown in the figure 10.

Figure 12. CPM diagram (own creation)

Source: Prepared in Project office X using project data

4.3.4.4 Schedule control procedure. The control schedule is a process of monitoring project status to update the project schedule and manage changes to the schedule baseline. It helps to determine the current status of the schedule by comparing the total work done with previously agreed schedules, and identify and manage changes that may be deemed necessary. Globally, it provides project tracking as well as progress updates and change management. The following chart describes the tools and techniques that should be used to monitor the progress of this project. (PMBOK, 2017, 2021).

Chart 9. Tools and techniques for the project schedule control (own creation)

Controlling Project Schedule	Techniques	Tools
Determine the project Status	Conduct performance reviews, measure, compare, and analyze schedule performance, such as actual start and finish dates, percent complete and remaining duration for the work in progress. Critical Path Method: The critical path helps you predict how long the project will take by analyzing the sequence of activities and discovering which are essential, and which you can skip and still deliver the project successfully.	Project Charter Gantt Chart
Resource Levelling.	Adjust start and finish dates based on resource constraints to balance the demand with the available resources.	Resource Histogram
Variances Analysis	Look at variances between the actual dates and finish dates.	Gantt Chart Calendar
Lagging project activities into alignment with the plan.	**Lead** -- Modify the logical relationship that can allow accelerating the successor activity. **Lag** -- Modify the logical relationship that directs a delay in the successor activity.	Gantt Chart Calendar
Utilize change control processes	If a change is necessary, a change request should be submitted for approval by the project manager. Changes will impact other aspects of the project such as the schedule or the critical path.	**Change Request** Form. Risk Register Resource Requirements Duration Estimates
Schedule Compression	Align delayed activities with the schedule plan by shortening or accelerating the schedule duration without reducing the project scope.	Critical Path Document Schedule in Gantt Chart.
Adjust progress and project reports	Adjust reports to suit stakeholders. This ensures that stakeholders are informed and engaged based on interest and influence.	Progress and project reports

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.4 The cost management plan

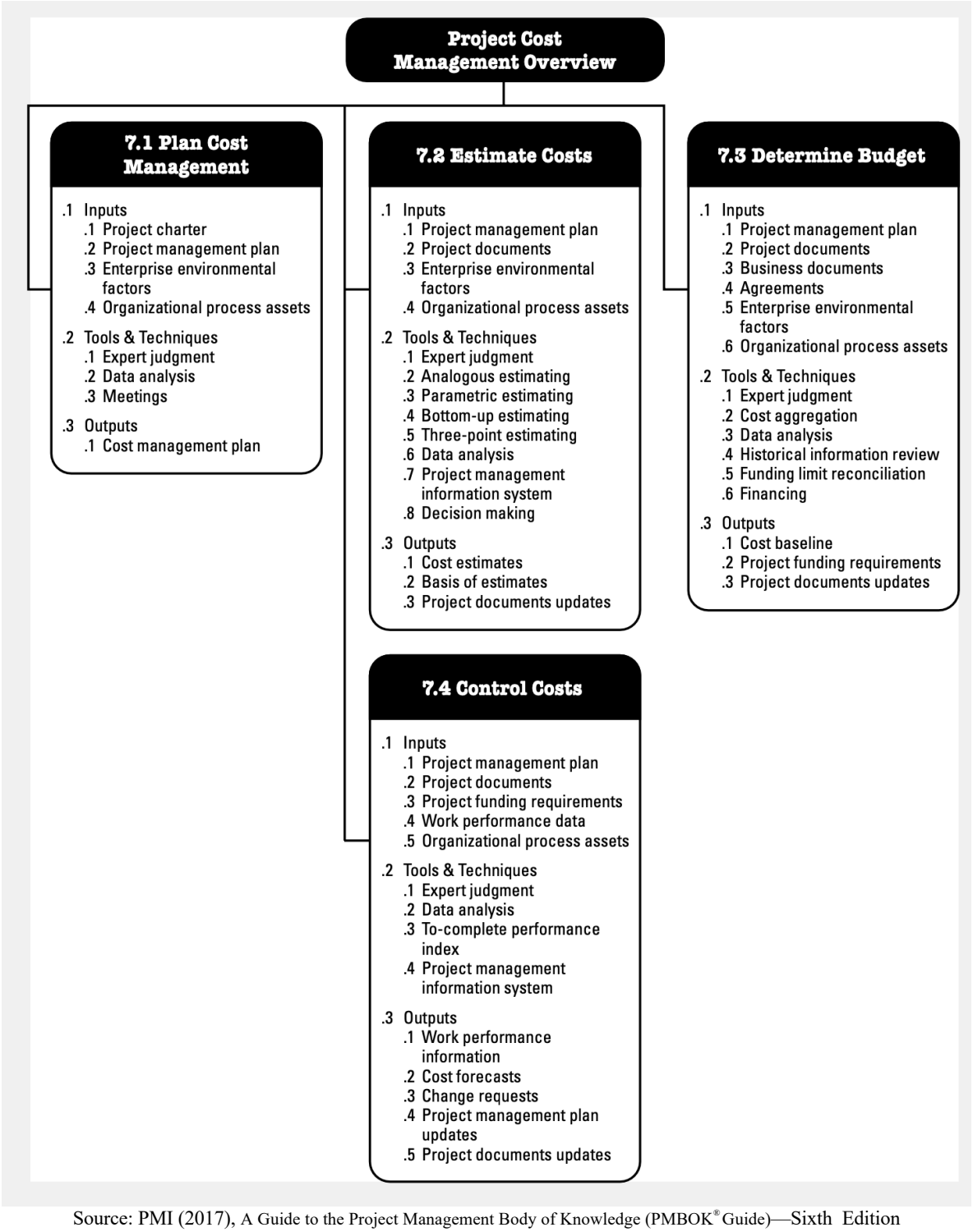
4.4.1 Introduction

The cost management plan is crucial for the management of the project budget. According to the PMBOK Guide, "project Cost Management" help to make sure that the project is completed within the approved budget, and it includes all the processes involved in planning, estimating, budgeting, financing, funding, managing and controlling costs so that the project. In other words, for the cost management of LINEON Village project, it is necessary to follow all the four steps in project cost management as mentioned in the PMBOK Guide (PMI, 2017, 2021) and described in the figure 11, including:

- The definition of how project costs will be estimated, budgeted, managed, monitored and controlled **(Plan Cost Managemen**t).
- The estimation of the monetary resources required to complete the project **(Estimate Costs)**.
- The estimation of the costs associated with activities or work packages to establish a cost baseline **(Determine Budget)**.
- The monitoring of the status of the project to update costs and verify changes in the cost baseline **(Control Costs)**.

The figure 11 also identifies the inputs, tools & techniques and outputs for all of the four (4) steps of the project cost management.

Figure 13. Project cost management overview



Source: PMI (2017), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition

4.4.2 Main stakeholders

In this section, the stakeholders refer to the individuals or entities that have direct or indirect responsibility regarding the cost management processes. The following chart provides a description of their roles and responsibilities.

Chart 10. Stakeholders for Cost Management Plan (own creation)

Name	Role	RESPONSIBILITIES
LINEON Group	Sponsor	• Reviews and approves final schedule baseline and schedule progress reports. • Provides overall guidance and mentoring. • Ensure the project delivers intended business benefits/values within budget and on schedule. • Research better financial institution
Government of Haiti	Public Lenders	• Facilitate the process of obtaining financial support in the public bank
Commercial banks and other financial institutions	Nonpublic Lenders	• Provide loans to LINEON Group
Local community	Direct Beneficiary	• Pay required amount on time to facilitate the project execution

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.4.3 Project Budget

The project budget of the LINEON Village project includes the cost off all activities to be executed in the project until completed. The following chart (Table 12) presents the synthetic budget of the project.

Chart 11. LINEON Village project cost (own creation)

TASK	Labor & Services	Materials	BUDGET in US $
GENERAL REQUIREMENTS			
Plans & Specifications	500000		500000
Permits: Zoning, Building, Environmental, Other	300000		300000
Study Fee	100000		100000
Administrative Costs	1500000		1500000
Legal Fees	50000		50000
Engineering Fees	1500000		1500000
		Subtotal 1	3950000
SITE PREP			
Demolition	20000	250000	270000
Land preparation	350000	750000	1100000
Surface Protection	250000	950000	1200000
Site Access and road tracing	350000	110000	460000
		Subtotal 2	3030000
Construction of the buildings			
Appartement buildings	3000000	35000000	21280000
Road connection	500000	5500000	6000000
Sport center construction	300000	1750000	2050000
Sanitation system	200000	1250000	1450000
Parks	150000	650000	800000
ELECTRICAL plant	20000	400000	420000
Utilities		450000	450000
		Subtotal 3	32450000
TOTAL			**39430000**
Contingency (5%)			1971500

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.4.4 Cost control procedure

4.4.4.1 Process description and importance. A good management of the costs of a project necessarily passes by the installation of devices being able to guarantee an effective control of the costs. The cost control helps avoid cost overruns and schedule delays by monitoring the cost status of the project taking into account all possible cost changes. Thanks to a regular budgetary control, corrective measures can be adopted in order to avoid deficits. Furthermore, according to the Project Management Institute (2021), this ensures that "cost expenditures do not exceed approved funds for each period" while meeting stakeholder expectations.

Budget management for the LINEON Village project will be based on Earned Value Analysis (EVA) and other project management tools and techniques will also be used to ensure improved return on investment and satisfaction for all stakeholders. According to the PMBOK Guide (2021) Earned Value Analysis helps integrate scope, cost and schedule baselines to compare baseline performance metrics to actual schedules and cost performance.

During the execution phase of the project, the project manager oversees the allocation of funds so that the budget is not exceeded. So:

- The purchasing and provisioning process helps to rationalize all the resources purchased.
- Appropriate documentation will be used for recording and reporting purposes.
- Rigorous budget monitoring and control procedures will be used by the project management team to record, track and monitor the budget from an accounting perspective and produce bi-weekly reports for the project manager;
- Monthly reports including detailed expense reports, variance reports and burn rate reports.

4.4.4.2 Cost change management. This process is used to prevent unauthorized and inaccurate changes from being included in the cost base. Therefore, whenever a cost change is required, here is the process to follow:

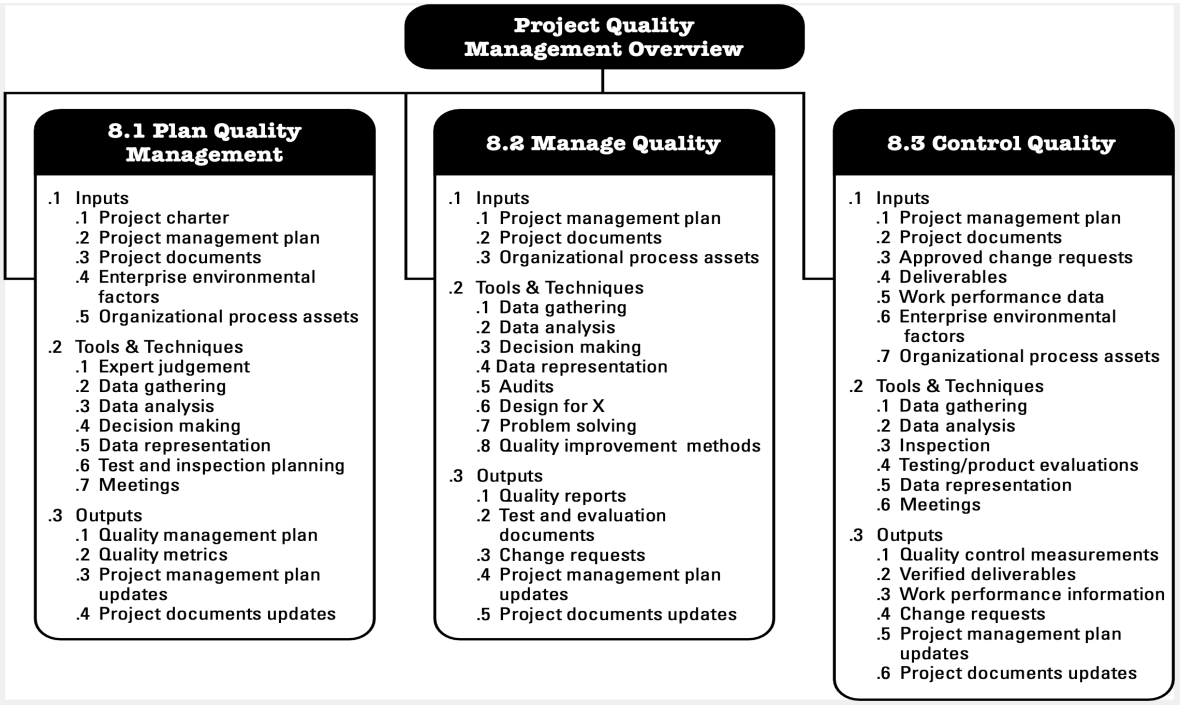
- Receipt of change requests.
- Logging change requests.
- Evaluation of change requests.
- Recommendations for accepting, rejecting or modifying change requests.
- Decision to Accept, Reject or Modify a Change Request.

4.5 Quality Management Plan

The quality management plan describes the quality policies, procedures, criteria and scopes of a project, as well as the roles, responsibilities and authorities, and documents the information necessary to effectively manage project quality from project planning to delivery. This part of the project management plan presents the mains stakeholders involved in the quality management processes and their responsibilities, the tools and techniques to be used in the quality management, the metrics and quality baseline, the Quality Activities Matrix, the quality documentation process and all other activities required to properly manage the project quality. As indicated in the PMBOK® Guide, it describes three elements of quality management: quality planning, quality assurance, and quality control. In other words, after the presentation of the quality policy, it answers three questions: Who is in charge? Where are we going? how are we going to get there?

The PMBOK® Guide states that quality management processes "…include all the activities of the performing organization that determine quality policies, objectives and responsibilities so that the project will satisfy the needs for which it was undertaken.

Figure 14. Project quality management overview



Source: PMI (2017 &2021), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth seventh Edition

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

This table identifies the main stakeholders involved in the quality management process and describes the responsibilities.

Chart 12. Role and responsibilities related to the quality management (own creation)

Roles	Responsibilities
Project Sponsor	Find and provide enough funds to complete the project. Most of the project cost will be supported by the main sponsor.
	Provide of cost contribution in the project realization. And ensure that all legal documents are available to facilitate the project implementation.
Regulator	Supervise the project implementation to ensure that all deliverables meet international port construction standards.
Project Manager	Deliver a final product that is on time and on budget and meets or exceeds stakeholder and/or customer (internal or external) expectations
Project team members	Give all contributions required for a good execution of each project tasks.
Informational, Education, Sensitization Awareness	Inform the population about the progress of the project

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.5.2 Key Factors related to Quality

This section identifies key success factors related to quality, based on the requirements prioritization done earlier.

Factor	Factor Definition
Seismic construction	All buildings must be constructed in accordance with international standards for seismic construction
Green space	The whole village must have enough green spaces surrounding each of the buildings
Apartment size	Each apartment must be at least 150 square meters
Materials	All materials used in construction must be of superior quality.

4.5.3 Metrics and Quality baseline

The metric and quality baseline are crucial to ensure an effective management of the LINEON Village project. The cost performance will be calculate using the cost performance index (CPI) formula (Earn value/Actual cost). Then a CPI lower than 1 will indicate that the project is going over budget. And Schedule performance index (SPI) will be used to measure the time performance of the project (Earn value/Present value). And a SPI lower than 1 will indicate poorer-than-planned project performance.

Chart 13. LINEON Village project metric and quality baseline (own creation)

Quality Objective	Metric	Metric definition	Expected outcome/result	Measurement frequency	Responsible
Cost control	Cost performance	Use the cost baseline to complete the project	Effective cost management	Weekly	Project Manager
Timeless	On-Time Performance	Project is delivering its planned outputs on time	Effective time management	Weekly	Project manager
Safety	Safety Incidents		Zero safety incidents	Daily	Project team

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.5.4 Quality Activities Matrix

This section establishes activities aimed at ensuring that quality objectives and metrics are met, and therefore, the requirements of the project. Both management actions (preventive quality costs) and control actions (quality detection costs) must be established so that quality management is carried out systematically.

Chart 14. LINEON Village project quality activity matrix (own creation)

Deliverable	Requirement	Specification	Manage and Control activities	Frequency	Responsible
Apartments	Anti-seismic apartment of at least 150 square meters construction.	Each floor of a building must contain a chaining of three (3) levels (floor, middle and floor).	Manage: Construction activities	Daily	Construction firm
			Control: Anti-seismic standards, Apartment size, time and cost control	Weekly	Project manager
Road connection	All access roads should be constructed enough	Two (2) lane asphalt roads (thickness of at least 5 cm) to facilitate traffic in the village.	Manage: Make sure that the project team really understands the requirements	Every day	Construction firm
			Control: Compare ongoing activities with the predefined requirements	weekly	Project managers
Parks and green space	Create much green space that is possible in the parks	Protection of existing trees, at least 500 new fruit trees will be planted as well as natural grass.	Manage: Green space construction activities	Every day	Construction firm
			Control: Respect to the environmental standards	weekly	Project manager
Modern sport center	A sport center for football, basketball, tennis and swimming pool	Area of 500 m2 for all sports facilities	Manage: Construction activities	Every day	Construction firm
			Control: International sport center construction activities	weekly	Project manager

Sanitation system	Build and install all required infrastructures	A small System for collecting, sorting garbage and transforming household waste into fertilizer	Manage: Construction and installation activities	Daily	Construction firm
				weekly	Project manager
Premises for fire brigade and national police	Construction of two buildings with appropriate space for fire brigade and national police	Anti-seismic construction of a building of two (2) floors	Manage: Construction activities	Daily	Construction firm
			Control: Standard space control	weekly	Project manager

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.5.5 Quality documents

To properly manage the quality in the execution of the LINEON Village Project, three main documents will be used: Issue log, lesson learn register and risk report.

1) Issue log sample

Issue type	Who identified it and when	Description	Priority	Responsible	Resolution date	Status	Final solution

2) Lesson learned register sample

Description of the situation	Impacts	Recommendations	Propose actions

3) Quality report sample

Quality issue	Recommendation	Corrective Action

4.5.6 Continuous Improvement Plan

As the project is planned to be executed following a predictive life cycle, it will therefore be necessary to ensure the flexibility of the plans through the application of an effective continuous improvement process. Thus, for each activity planned (plan), being executed (Do) it will be necessary to continuously compare the realization to the plan (Check). For any discrepancy noted, the manager and the project team will ensure that the appropriate corrective measures are adopted and implemented as soon as possible (Act).

Process Description
1. Plan: For each deliverable, every aspect is described in the scope management plan and quality insurance activities are planned
5 Do: During the project execution, those activities will be executed
6 Check: It will be necessary to check if those activities are properly executed
7 Act: Depending on the check result, appropriate corrective actions will be necessary to make sure quality standards are

4.6 Resource Management Plan

4.6.1 Introduction

According to the PMBOK Guide, the Project Resource Management is the process of identification, acquisition and management of the resources required for the successful completion of the project. It includes the six (6) following sub-processes:

• 1. Resource Management Planning:	Definition of how to estimate, acquire, manage and utilize physical and team resources.
• Activity Resources Estimate:	Estimate team resources and the type and quantities of material, equipment and supplies necessary to perform project work.
• Resources Acquisition:	Obtain team members, facilities, equipment, materials, supplies and other resources necessary to complete project work.
• Team Development:	Improve competencies, team member interaction and the overall team environment to enhance project performance.
• Team Management:	Track team member performance, providing feedback, resolving issues and managing team changes to optimize project performance.
6. Resources Control:	Ensure that the physical resources assigned and allocated to the project are available as planned, as well as monitoring the planned versus actual use of resources, and performing corrective action as necessary

PMI (2017, 2021), Project Management Body of knowledge guide.

This part of the LINEON Village project management plan focuses only on the resource management planning process. The purpose of the resource management plan is to ensure that sufficient resources are available for the successful completion of the project.

4.6.2 RACI Chart

The R A C I (responsible, accountable, consult, and inform) chart, is a type of RAM (Responsibility Assignment Matrix) that shows the work to be done and the level of responsibility of each person or entity. The following chart resumes the main activities regarding the resource management and the level of responsibility for the LINEON village project. A RACI chart is a useful tool to use to ensure

clear assignment of roles and responsibilities when the team consists of internal and external resources. (PMI, 2021)

Chart 15. LINEON Village project RACI Chart (own creation)

RACI chart	Entity				
Activities	Project sponsor	Project manager	Project team	Construction firm staff	Training team
Create job profile	C	A	R		
Publish job offer		A	R		
Preselect candidates		A	R		
Revise Resumes		A	R		
Schedule interviews		A	R		
Shortlist of candidates		R			
List of supplies and materials		R		A	
Order supplies		A		R	
Update inventory		A	R	C	
Deliver training		A			R
Construction activities		C		R	
R=Responsible. A=Accountable, C=Consult I=Inform					

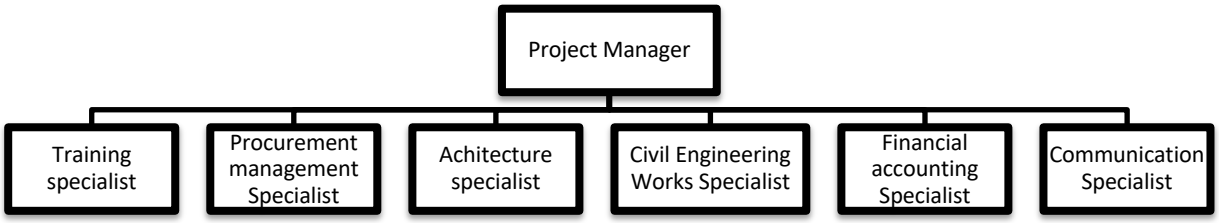
Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.6.3 Project main Staff and Organizational structure

Table 17. Project main staff and code

Job name	Code
Project manager	PM
Civil Engineering Works Specialist	CES
Architecture specialist	AS
Communication Specialist	CS
Financial accounting Specialist	FS
Procurement management Specialist	PS
Training specialist	TS

Figure 15. Project organizational structure

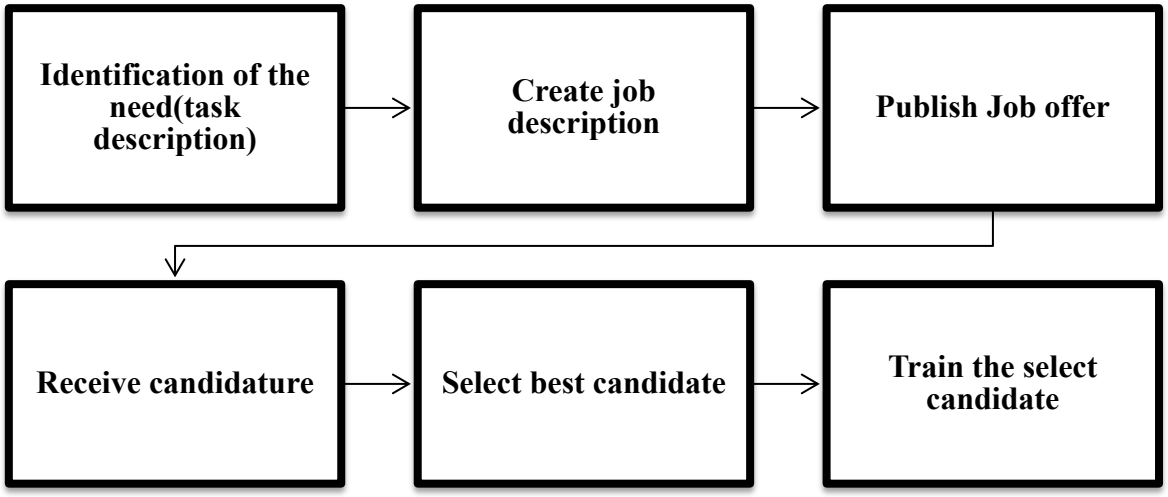


Source: Adapted from the *LINEON Group administrative procedures manual* (2022) Own creation.

4.6.4 Project recruitment process

This figure describes the main steps in the recruitment process of each member of the project team.

Figure 16. Project recruitment process (own creation)



Source: Adapted from the *LINEON Group administrative procedures manual (2022)*. Own creation.

4.6.5 Team training

Training is crucial in the resource management of every activity specially in a project. In this project, training activities will be held periodically (each month) to ensure that every member of the project team have all required skills to ensure the project success. Training can take different forms:

- Meetings
- Workshop
- Brainstorming
- Conference, …

4.7 Communications Management Plan

4.7.1 Introduction and communication objective

It is essential to plan and execute project communication activities to ensure that all project stakeholders have the information they need to perform their roles throughout the project. The Communications Management Plan facilitates an efficiently and effectively communication between the various stakeholders, by defining and documenting the communication items content, format, frequency, the audience and expected results. Communication in every project should be: **Adequate (**right format and right content), **Specific** (for the targeted audience), **Sufficient** (complete information), **Concise** (brief), and **Timely** (addressing points at the right time).

4.7.2 Project stakeholders involved in the communication management

In every communication planning, it is crucial to identify all the stakeholders and their roles in the communication management process. The following chart (Chart 16) describes the main roles in the LINEON Village project communication management.

Chart 16. Project stakeholders related to the communication management (Own creation)

	Stakeholders	Communication method	Types
Internal	Project manager	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations, Videoconference, Phone calls
	Project Manager	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations/ Phone calls, Videoconference
	Project team members	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations/ Phone calls, Videoconference
External	Financial institution	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations, Videoconference
	EPPLS/Social Housing entity of the Haitian Government	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations, Videoconference
	Municipalities authority	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations
	Informational, Education, Sensitization Awareness	Interactive, push and pull	Brainstorming, emails, reports, surveys, meetings, and presentations.

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.7.3 *Communication matrix*

Maintaining a fluid and constant communication with all stakeholders involved in the project is essential for the project success. The communication matrix below (Table 17) describes the responsibility of the Project team and stakeholders, and specifies the type, format, and frequency of communication

Chart 17. Communication matrix (Own creation)

Item Name	Audience	Responsible person	Frequency	Media of Communication
Planning Kick-off Meeting	Project sponsor Project Manager (PM) Project Core Team (PCT)	Project Manager (PM)	Once at Project Level.	Meeting and Meeting minutes
Executing Kick-off Meeting	Project sponsor Project Manager (PM) Project Core Team (PCT)	Project Manager (PM)	Once at Project Level or for each major project phase.	Meeting and Meeting minutes
Project Status Meeting	Project sponsor Project Manager (PM) Project Core Team (PCT) (	Project Manager (PM)	*2 day per month*	Meeting minutes and Project Status Report.
Project Core Team (PCT) Meeting	All Project Core Team (PCT) members working on the project.	(Functional) Team Leader	*2 day per month*	Meeting minutes Updated Change log Updated project plans with actuals Estimate Time to Complete updated.
Project Review Meeting	Project Manager (PM) Team Leader Project Support Officer	Project Manager (PM)	Quarterly (or more frequently, depending on project duration).	Meeting minutes Project Progress Report

Item Name	Audience	Responsible person	Frequency	Media of Communication
Project Steering Committee (PSC) Meeting	Solution Provider (SP) Project Steering Committee (PSC) members	Project Owner (PO) Project Owner (PO)	Monthly or at the moment there is an important project milestone reached, that needs approval(s) from Sponsor(s).	Meeting minutes Decision log updated
Change Control Meeting	Project sponsor Project Manager (PM) Project Core Team (PCT)	Project Manager (PM)	*2 day per month*	Meeting Meeting minutes Change log (updated)
Project-End Review Meeting	Project sponsor Project Manager (PM) Project Core Team (PCT) User Representatives (URs)	Project Manager (PM)	Once per project or major project phase.	Meeting minutes Project-End Report
Project Status Report	Project sponsor Project Manager (PM) Project Core Team (PCT)	Project Manager (PM)	Will follow the frequency defined for the Project Status Meeting.	Word document
Project Progress Report	Project sponsor Project Manager (PM) Project Core Team (PCT)	Project Manager (PM)	Will follow the frequency defined for the Project Review Meeting.	Word document
Quality Review Report	Project sponsor Project Manager (PM) Project Core Team (PCT)	Project Manager (PM)	Monthly	Word Document
Outsourcing (Contractor) Status Report	Project Manager (PM) Project Core Team (PCT) Construction firm	Contractor	*2 day per month*	Word Document
Project-End Report	Refer to Audience specified in the Project-End Review Meeting.	Project Manager (PM)	Once, during the Project Closing Phase.	Word Document

Note: Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

4.8 Risk Management Plan

4.8.1 Introduction

The risk management plan is useful to successfully manage project by defining procedures for managing risks throughout the project. In the PMBOK Guide, a risk is defined as « an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives ». In other words, a risk can have both positive (opportunity) and negative (threat) impact on a project.

The purpose of project risk management is to help to seize opportunities and minimize the impact of threats during the project execution. Firstly, it is important to identify the project risks, secondly determine the root causes, then precise the likelihood and level of impacts of each of them, and finally adopt a cost-effective contingency plan.

This risk management plan of LINEON Village Project, outlines how risk management activities will be performed, recorded and monitored throughout the lifecycle of the project by the risk management team, and provides templates and practices for recording and prioritizing risks.

4.8.2 Roles and Responsibilities

Role	Responsibilities
Project Manager (risk manager)	Provides a methodology to identify risks and their categories, analyze the financial impact of loss to the organization, employees, public and the environment. Continually monitors the activities for potential risks.
Project Team	Identifies risks, analyzes them, performs risk mitigation strategies and creates a risk register, which is periodically updated throughout the project; Monitor risk triggers, responds to risks, identifies and evaluates new risks.
Risk Owner(s)	Monitors the risk, executes risk responses when necessary, performing qualitative and quantitative risk analysis.
Other Key Stakeholders	The other stakeholders assist in identifying and determining « unknown unknowns », and provide updates as such to the project management team.

4.8.3 Projects environment factors

Haiti is a country where the housing problem is flagrant, but with few initiatives and mechanisms to encourage real estate projects. The largest housing projects that have ever been developed have been responses to emergencies arising from natural disasters that the country has experienced, as was the case in 2008, 2010, 2021, etc. Generally, these social housing projects offer very little comfort since they are aid projects to the Haitian Government financed by NGOs and countries that are friends of Haiti. Mostly, each family manages to build its own house, mostly without any real supervision from the local authorities, which leads to anarchic constructions, especially for people with low economic means. LINEON Village will be the largest real estate project ever executed in the northern region of Haiti.

4.8.4 Risk identification process and Risk breakdown structure (RBS)

In the risk identification process the project team and relevant stakeholders have the responsibility to consider the effects of environmental factors, organizational culture and the project management plan on the project. Brainstorming, Interviewing and SWOT Analysis are the main methods used to identify project risks. For each risk, it is important to determine the positive or negative impact on the project and the means to manage it.

- A negative risk is considered as a threat and would be treated as follows: avoid, transfer, mitigate or accept;
- A positive risk is considered as an opportunity that would be handled as follows: exploit, share, improve or accept.

The Risk Management Plan will be updated periodically as the project is continuously monitored for probable events that were "unknown unknowns". In case of such risks, they will be addressed with a strategy called "workarounds".

Chart 18. LINEON Village project: Risk Breakdown Structure (Own creation)

RBS level 0	RBS level 1	RBS level 2	RBS level 3
LINEON Village project RBS	1. Financial risks	1.1 Loan availability	1.1.1 Difficulties to find loan in the local financial institution
			1.1.2 Laon rate increase
		1.2 Having extra charges	1.2.1 Budget Increase
	2. Resource (hiring) Risks	2.1 Construction firm Selection risks	2.1.1 Impossibility to find a single firm for all construction works
		2.2 Human resource selection risks	2.2.1 Appropriate candidate unavailable
	3. Government risks	3.1 Regulation changes	
		3,2 Authorization difficulties	
	4. Political & Environmental risks	4.1 Civil and political unrest	
		4.2 Natural disaster	

Note: Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

4.8.5 Qualitative Risk Analysis

The probability and impact of occurrence for each identified risk was assessed by the project team using the probability scale, as well as the impact scales of a risk on major project objectives, as listed below.

Chart 19. Risk probability and impact scale

Probability Scale		**Impact Scale**	
Likelihood of Occurrence	**Score Assigned**	**Impact**	**Score Assigned**
Very unlikely	0.1	Very low	0.1
Somewhat unlikely	0.3	Somewhat low	0.3
50-50 possibility	0.5	Moderate	0.5
Somewhat likely	0.7	Somewhat high	0.7
Very likely	0.9	Very high	0.9

Note: Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

Chart 20. Conditions for Impact Scales of a Risk on Major Project Objectives

	Impact Definition				
Project Objective	Low	Somewhat low	Moderate	Somewhat high	High
	[0.1]	[0.3]	[0.5]	[0.7]	[0.9]
Cost	Cost variance not exceeding 5%	Cost variance of 6%-14%	Cost variance of 15%-25%	Cost variance of 26%-40%	Cost variance exceeding 40%
Time	Time variance less than 1%	Time variance of 1%-4%	Time variance of 5%-10%	Time variance of 11%-20%	Time variance exceeding 20%
Scope	Scope change barely noticeable	Minor areas of scope affected	Major areas of scope affected	Scope change unacceptable to sponsor	Scope change warrants a new project charter
Quality	Quality change barely noticeable	Only cosmetic applications are affected	Quality change requires sponsor approval	Quality change unacceptable to sponsor	Project deliverables are unfit or unnecessary for purpose

Note: Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

4.8.6 Quantitative Risk Analysis

The risk score was used to outline the category in which a risk falls. It is the probability of the risk occurring, multiplied by the impact of the risk on cost, schedule, scope and quality. Each risk was categorized based on the following risk score scale.

Chart 21. Risk Priority Designation Code

Risk Score	**Priority**	**Key**
0.01to 0.07	Low	
0.08 to 0.15	Medium	
Above 0.15	High	

Note: Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

Chart 22. Probability and Impact Matrix Showing Risk Score (Probability x Impact)

		Threats					Opportunities				
Probability	**0.9**	0.09	0.27	0.45	0.63	0.81	0.81	0.63	0.45	0.27	0.09
	0.7	0.07	0.21	0.35	0.49	0.63	0.63	0.49	0.35	0.21	0.07
	0.5	0.05	0.15	0.25	0.35	0.45	0.45	0.35	0.25	0.15	0.05
	0.3	0.03	0.09	0.15	0.21	0.27	0.27	0.21	0.15	0.09	0.03
	0.1	0.01	0.03	0.05	0.07	0.09	0.09	0.07	0.05	0.03	0.01
		0.1	**0.3**	**0.5**	**0.7**	**0.9**	**0.9**	**0.7**	**0.5**	**0.3**	**0.1**
		Impact (numerical scale) on an objective such as time, cost, scope or quality									

Note: Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

Risks that fell within the red and yellow zones were assigned a risk response plan, which included both a risk response strategy and a risk contingency plan.

4.8.7 Risk Response Planning

Each major risk (those falling in the red & yellow zones) was assigned to a risk owner for monitoring and controlling purposes to ensure that the risk will not "fall through the cracks".
For each major risk, one of the following approaches was selected to address it:

- **Avoid, Transfer, Mitigate or Accept** – For negative risks or threats
- **Exploit, Share, Enhance or Accept** - For positive risks or opportunities

Any secondary risks that resulted from the risk mitigation response was documented in the Appendix (Risk Register Worksheets), and will follow the same risk management protocol as the primary risks.
For each major risk that is to be mitigated or that is accepted, a course of action will be outlined in the event that the risk does materialize, in order to minimize its impact.

4.8.8 Risk Monitoring, Controlling and Reporting

The level of risk on the project will be tracked, monitored and controlled, and reported throughout the project lifecycle. A "Top 5 Risk List" will be maintained by the Project Manager, and will be reported as a component of the project status reporting process for this project. All project change requests will be analyzed for their possible impact to the project risks. As risk events occur, the

list will be re-prioritized during weekly reviews and risk management plan will reflect any and all changes to the risk lists including secondary and residual risks.

The Project Manager will:

- Review, reevaluate and modify the probability and impact for each risk item
- Analyze any new risks that are identified and add these items to the risk list (or risk database)
- Monitor and control risks that have been identified
- Review and update the top ten risk list
- Escalate issues/problems to management

The Risk Owner will:

- Help develop the risk response and risk trigger and carry out the execution of the risk response, if a risk event occurs
- Participate in the review, re-evaluation and modification of the probability and impact for each risk item on a weekly basis
- Identify and participate in the analysis of any new risks that occur
- Escalate to Project Manager, issues/problems that,
    - ❖ Significantly impact the projects triple constraint or trigger another risk event to occur
    - ❖ Require action prior to the next weekly review
    - ❖ Have a risk strategy that is not effective or productive, causing the need to execute the contingency plan

4.8.9 Risk Register

The risk register (shown on the following page), will be maintained by the Project Manager and periodically reviewed and updated. It is presented in its current form for review. These responsibilities include monitoring the risk threshold and activating the contingency plans.
Detailed information pertaining to the preparatory plans, contingency plans and their associated cost and schedule impacts for the top 5 risks identified for this project can be viewed in Appendix (Risk Register Worksheets).

Chart 23. LINEON Village project Risk register

Project - ["LINEON Village project"]												
Rank	**ID**	**Risk**	**Risk (Description)**	**Probability**	**Impact**	**Risk Score (P*I)**	**Potential Impacts (Cost & Schedule)**	**Trigger**	**Response Plan**	**Contingency (Cost & Time)**	**Category**	**Risk Owner**
	1.1	Loan availability	Haiti is a country where loan is les available in the Caribbean. Specially, for real estate project. But there is some institution of the government that can provide financial support to some big project in the country. But all depend on the financial situation of those institution regarding to the global activities in the country. The project must be supported by some officials of the government.	0.3	0.5	0.15	Cost – US 100000 Schedule – 180 days delay	1. Economic crisis 2. Political unrest	Utilize weekend days, 8 hours per day, and additional weekday hours, up to 4 hours more on normal time, to bring schedule back on track.	Cost – US$10K Schedule – normalized schedule	External, Regulatory	LINEON Group CEO-PMO
	1.2	Having extra charges	Due to the precarity of the economic system in Haiti, almost every product is imported, and the price could increase from day to day. Also, the change rate can have high impact on the cost of the product.	0.3	0.5	0.15	Cost – N/A Schedule – N/A		Establish direct contact with the importers to control the cost	Cost – N/A Schedule – normalized schedule	External	Project manager

Project - ["LINEON Village project"]												
Rank	**ID**	**Risk**	**Risk (Description)**	**Probability**	**Impact**	**Risk Score (P*I)**	**Potential Impacts (Cost & Schedule)**	**Trigger**	**Response Plan**	**Contingency (Cost & Time)**	**Category**	**Risk Owner**
	2.1	Construction firm Selection risks	It could be difficult to find a single firm for all construction works	0.3	0.5	0.15	Cost – 200000 USD Schedule – 50 days delay		Divide the project into work package and choose different construction firm for each category	N/A	External	Project manager
	3.2	Delay in government approvals	Due to normal tardiness in government approvals, there could be a delay in obtaining all necessary clearances, licenses and permits from the necessary government agencies, which could result in schedule delays as much as 10 days.	0.3	0.7	0.21	Cost – N/A Schedule – 50 days delay	Approval processes from government agencies	1. Submission of necessary documentations for building permission ninety days before project commencement 2. Escalate matter to government agency senior management by writing to	1. Request a meeting between Project Manager & CEO of Government agency for a speedy resolution 2. Request a conditional approval	External, regulatory	LINEON group CEO Project sponsor

Project - ["LINEON Village project"]												
Rank	**ID**	**Risk**	**Risk (Description)**	**Probability**	**Impact**	**Risk Score (P*I)**	**Potential Impacts (Cost & Schedule)**	**Trigger**	**Response Plan**	**Contingency (Cost & Time)**	**Category**	**Risk Owner**
									fast track approvals 3. Write letter to CEO of approval agency for update on approval request			
		4.1 Civil and political unrest	The proposed construction site for the project lies in an area bordered by three communities with poor employment and development rates. Even though these communities are linked to the same political party, the consequence of an unrest due to eager job seekers, could delay the project schedule and generate extra cost.	0.5	0.3	0.15	Cost – US $38.2K Schedule – 5 days delay	Regular visits of residents to the gate of the construction site, asking for or demanding employment.	1. Employ 10 laborers to clean up waste materials during construction at US$50 per person/week. 2. Activate police patrolling at US$25 per hour during the construction phase.	1. Cost – US$35 Schedule – N/A 2. Cost – US$3.2K Schedule – N/A	External, force majeure	Project core team leader

Project - ["LINEON Village project"]												
Rank	**ID**	**Risk**	**Risk (Description)**	**Probability**	**Impact**	**Risk Score (P*I)**	**Potential Impacts (Cost & Schedule)**	**Trigger**	**Response Plan**	**Contingency (Cost & Time)**	**Category**	**Risk Owner**
	4.2	Natural disaster	As an Island territory, Haiti as with the most of the Caribbean countries faces periodical natural disaster. The risk of a hurricane as well as incessant rainfall are possible. A hurricane event during project execution could have a huge impact on the project budget and schedule. This impact is estimated to be as high as 100 days to the schedule and $4000,000.00 to the budget. It is also estimated that some resources (including human resources as well as supplies from overseas vendors) would not be readily available if a hurricane should hit.	0.3	0.5	0.15	Cost – US $400K Schedule – 100 days delay	1. Hurricane, flash flood watch and/or warnings. 2. Significant weather trough. 3. Hurricane and/or tropical storm watch announced for neighboring countries and/or countries from which our supplies are imported.	Utilize weekend days, 8 hours per day, and additional weekday hours, up to 4 hours more on normal time, to bring schedule back on track.	Cost – US$5K Schedule – normalized schedule	External, weather	PMO

Note : Adapted by the author from the PMBOK Guide (PMI, 2017 & 2021)

4.9 Stakeholder Management Plan

According to the PMBOK Guide (PMI, 2017 $ 2021), the Project Stakeholder Management is the process of identification of the people, groups or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution. It includes four (4) sub-processes as described in the following chart (table 22). It is a crucial process for the success of each project, because without understanding the roles of the involved stakeholders, the project can't be executed successfully. This part presents the stakeholder management plan of the LINEON Village project, a social housing.

Figure 16. Project stakeholder management overview

Source: PMI (2017 & 2021), A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition

The LINEON Village project aims to build a modern village in Haiti with modern comfort in the Northern region of Haiti. Let's say that it is the first big social housing project to be executed in Haiti, excluding those funded by the NGO and Haiti friend countries.

The successful execution of a project like that requires the involvement and the commitment of the Haitian government, the local population globally, the financial institution and the direct eventual beneficiary of each apartment. In the following chart, the main stakeholders of the LINEON Village project are identified as well as their role, impact, interest etc.

Chart 24. Stakeholder matrix (own creation)

Stakeholder	Functional area	Role /Responsibility	Main expectations	Major requirements	Influence /Impact (low-medium-High
LINEON group	(Project Sponsor)	Approves Scope Provides high-level scope definition (Project Charter).	All project deliverables are completed as planned	Successful project completion Engagement of other stakeholders	High
Dieulin NAPOLEON	Project Manager	Overall responsibility for the project execution successfully	The project is completed successfully	All resources are available for the project execution	High
SEKOSA/BIEN	Construction firms	Realize all construction activities in the project execution	All the resource are available to facilitate the completion of all construction activities	On time payment for all construction activities	High
Team member	Project team	Execute project's task and activities	All required resources are available to help them execute their task	Availability of materials and on	High

Stakeholder	Functional area	Role /Responsibility	Main expectations	Major requirements	Influence /Impact (low-medium-High
			correctly. Good salaries and others advantages	time payment of salaries	
Engineers, Lawyers and Notaries	Independent experts	Provide Independent support to the project executions	Their recommendations are applied to the successful execution of the project	On time payment	Medium
Ministries-in-concern, e.g., Transport Ministry, Finance Ministry, Environment Ministry, Housing & Urban Planning Ministry and Labor Ministry.(EPPLS)	Regulator	Haitian government entity of social housing project	The project execution respects the directive of the Haitian government concerning housing project	Submission of all project documents	Low
ONA, SOGEBEL	(Financial institution)	Provide additional fund (loan) for the project execution	On time reimbursement of loan	Solvability of the project sponsor	High
Direct beneficiary	(Apartment future owner and resident)	Provide financial contribution and all other support	The project is executed as planned	Apartment are available as planned	Medium
Local community	Surround population	Accept and support the project execution.	The project execution brings job opportunities and other advantages	Job opportunities	medium
Media and interest groups	Interest group	Support the project execution specifically in the communication processes	The project execution doesn't jeopardize the well-being of the population and the environment	Fluid communication about the project	Low

Note: Adapted from the *FGP Template Example*, UCI, 2022, with authorization from the author. Own creation.

4.10 P5 Impact Analysis

In today's world, every project execution should follow the principal of sustainable and regenerative development. The P5 impact analysis is one of the tools used to comply with them. But, before presenting the P5 impact analysis, let's see what The Sustainable Development (SD) can be defined as the use of resources to improve society's well-being without compromising the availability of resources for future generations, that is to say in a way that does not destroy or undermine the support systems needed for future growth. However, focusing on the usage of resources to meet the current societal needs but at the same time ensuring the healing and flourishment of resources for future generations, the Regenerative Development (RD) is the using of resources to improve society's well-being in a way that builds the capacity of the support systems needed for future growth (GPM, 2023).

The SD is a half-vast approach to vast problems with a purpose to maintain the status quo. His approach only searches to maintain Capacity which is in some way incomplete by considering the present as the best we can do. It has a Mechanistic worldview" by only asking: "How can we solve this problem in such a way that we sustain or do not hurt the underlying support systems?" (GPM, 2023)

The purpose of this P5 impact analysis is to ensure that the LINEON Village project execution complies with the Green Project Management (GPM)® or Sustainable Project Management Standards. In other words, it is crucial to ensure a net positive environmental, social and economic impact of the project outcome's entire lifecycle while applying methods, tools and techniques to achieve a stated objective. The P5 impact analysis is resumed in the following chart.

Chart 25. LINEON Village P5 impact analysis

Category			Description (Cause)	Potential Impact	Impact Score Before	Proposed Response	Impact Score After	Change
	Subcategory							
	Element							
2,1	**Product Impacts**							
	2.1.1	Lifespan of the product	The building should be anti-seismic	Jeopardize the resistance of the building	3	Use sustainable materials	5	2
	2.1.2	Servicing of product	N/A					
2,2	**Process (Project Management) Impacts**							
	2.2.1	Effectiveness of project processes	It's possible that sustainable practice influence project cost	Project total cost would increase when sustainability items are included in the project plan	1	- The procurement will favor companies which vow to perform the required work with the lower sustainability cost	4	3
	2.2.2	Efficiency of project processes	The success of the project since it is executed in existing infrastructure is to finish in the shortest time possible	Delays will increase costs and potential risks like natural disasters are more likely to affect to project execution	2	The procurement will favor companies which vow to perform the required work in the shortest time	4	2

	2.2.3	Fairness of project processes	Waste material and unused material may be recycled and not thrown away	Construction process generates waste material and some unused material that represent costs for the project and damage to the environment if not processed correctly	2	Most of unused material is valued and distributed to local recycling companies	4	2
			Product and Process Average		**2,0**		**4,3**	**2,3**
3	**People (Social) Impacts**							
3,1	**Labor Practices and Decent Work**							
	3.1.1	Employment and staffing	Fair recruitment process	Encourage team engagement	3	Clearly describe the recruitment process	4	1
	3.1.2	Labor/management relations	N/A					
	3.1.3	Project health and safety	N/A					
	3.1.4	Training and education	N/A					
	3.1.5	Organizational learning	Understand the Organization mission and vision	Misunderstanding of the organization structure	2	Kick-off training to all project direct stakeholders	5	3
	3.1.6	Diversity and equal opportunity	N/A					
	3.1.7	Local competence development	N/A					
3,2	**Society and Customers**							
	3.2.1	Community support	some people have their farm on the land where the project will be carried out	The local community must support the project to avoid conflict	3	compensate people and give them opportunities within the framework of the project	5	2

	3.2.2	Public policy compliance	Project execution must comply with all public polices	Blocking of project activities by the competent authorities.	3	Obtain all legal documents required	5	2
	3.2.3	Protection for indigenous and tribal peoples	N/A					
	3.2.4	Customer health and safety	N/A					
	3.2.5	Product and service labeling	N/A					
	3.2.6	Market communications and advertising	N/A					
	3.2.7	Customer privacy	N?A					
3,3	**Human Rights**							
	3.3.1	Non-discrimination	Avoid discrimination in each aspect of the project activities	Bad work environment and conflict	2	Apply fair rules in the work environment to avoid discrimination	4	2
	3.3.2	Age-appropriate labor						
	3.3.3	Voluntary labor						
3,4	**Ethical Behavior**							
	3.4.1	Procurement practices	Non-application of the CNMP recommendation about public procurement	Mismanagement of project funds	2	Make sure that all procurement activities respect the National public procurement commission recommendations	4	2
	3.4.2	Anti-corruption	Lack of clarity in the process of disbursement of project funds	Lack of trust from project sponsor	3	Use an explicit financial and accounting procedures manual	5	2
	3.4.3	Fair competition	Lack of advertising about the bidding process	The best suppliers do not have the opportunity to submit their offers	3	Give possibility to as many possible suppliers to participate	5	2

					People Average	**2,6**		**4,6**	**2,0**
4	**Planet (Environmental) Impacts**								
4,1	**Transport**								
	4.1.1	Local procurement	Priority to the local Companies in procurement process	General costs will increase and environmental affectation will be higher if foreign companies are performing the work	2	50% of contracts are performed by local companies	4	2
	4.1.2	Digital communication	N/A					
	4.1.3	Traveling and commuting	Deplorable road conditions result in material and equipment delays	Delays in project	2	Request and source materials and equipment from suppliers earlier to avoid project delays	4	2
	4.1.4	Logistics	Local companies are favored for materials and supplies	If materials and supplies are sourced from foreign suppliers, transportation costs will increase as well as air pollution and CO2 emissions	3	Most of materials and supplies will be sourced from local companies	4	1
4,2	**Energy**								
	4.2.1	Energy consumption	Designs for port infrastructures does not include green design criteria	General benefit to the environment will not be achieved	2	80% of all designs developed include green design criteria	4	2
	4.2.2	CO2 emissions	Utilizing machinery which uses diesel	Increase in CO2 emissions	1	Utilize hybrid construction machinery which will reduce CO2 emissions	4	3

	4.2.3	Clean energy return	N/A					
	4.2.4	Renewable energy	Available renewable energy is not put to use	Energy costs will rise and complete dependency on electrical grid can stop port operations	2	Designs will include solar power energy generation	4	2
4,3	**Land, Water, and Air**							
	4.3.1	Biological diversity	N/A					
	4.3.2	Water and air quality	N/A					
	4.3.3	Water consumption	N/A	Water resources will be wasted	2	The design will establish protection of water sources, efficient use, and low water waste, and sustainability criteria items are fulfilled	5	3
	4.3.4	Sanitary water displacement	The new Sanitary facilities do not comply with green standards	Contamination of coastal areas could occur	2	Establish the treatment and reuse of processed water	5	3
4,4	**Consumption**							
	4.4.1	Recycling and reuse	Waste material and unused material may be recycled and not thrown away	Construction process generates waste material and some unused material that represent costs for the project and damage to the environment if not processed correctly	2	90% of unused material is valued and distributed to local recycling companies	5	3
	4.4.2	Disposal	Responsible disposal of unneeded materials	Failure to dispose unneeded items responsibly can be hazardous to ecosystems	3	Contract with solid waste management authority to collect unneeded items at least twice weekly	5	2

	4.4.3	Contamination and pollution	N/A					
	4.4.4	Waste generation	Scrap materials will be stored on compound.	This can be hazardous to ecosystems.	3	Contract with local metal recycling company where scrap materials will be distributed twice monthly	5	2
				Planet Average	**2,2**		**4,5**	**2,3**
5	**Prosperity (Economic) Impacts**							
5,1	**Business Case Analysis**							
	5.1.1	Modeling and simulation						
	5.1.2	Present value	The project will be completed under budget	Refusal of the sponsor to provide additional finances for the project.	2	Effectively planning and use of project resources throughout the project lifecycle	4	2
	5.1.3	Direct financial benefits	Increased revenue for the Northern Part of Haiti	The project will lead to Haiti having to invest financial resources to complete project	2	Rigorous adaptation to project management principles.	5	3
	5.1.4	Return on investment	Project will not go over budget	Project will not have any savings from cost indicated.	3	Working efficiently to ensure that project sticks to scope and has need for minimal changes	4	1
	5.1.5	Benefit-cost ratio	N/A					
	5.1.6	Internal rate of return	N/A					
5,2	**Business Agility**							

	5.2.1	Flexibility/optionality	The project will acquire all related environmental approvals/certifications	Failure to acquire the certifications/approvals will lead to stakeholder not approving of the project	3	Conduct training/sensitisation sessions with staff and surrounding	3	0
	5.2.2	Business flexibility	Working in shifts, will allow for the activities to be completed on time	Failure to complete activities and project within schedule	3	Working in shifts will remove the need for overtime pay and benefits.	5	2
5,3	**Economic Stimulation**							
	5.3.1	Local economic impact	The government will get greater revenue to invest in other areas for growth and development	Could result in wastage and heavy dependence on the project to create jobs, etc.	3	Develop an action plan on what project resources will/will not be used for in order to avoid wastage	3	0
	5.3.2	Indirect benefits	More job opportunities for local community	The potential decline in political and economic situation can cause loss of jobs for the citizens, potentially leading to increased criminality	3	Develop and execute a rigorous on the job training as well as sponsor programmed to benefit the communities.	3	0
				Prosperity Average	**2,7**		**3,9**	**1,1**
				Overall Average	**2,4**		**4,3**	**1,9**

Note: Adapted from the GPM and UCI Template Example, GPM, 2023, with authorization from the author. Own creation.

5. CONCLUSIONS

1. This project consists of developing a modern village of at least forty (40) houses of seven (7) floors of four (4) apartments on each floor in the northern region of Haiti by combining aspects of participatory and social housing. This will be the largest project of its kind resulting from private initiatives, because the majority of social housing projects are financed by NGOs and countries that are friends of Haiti in terms of aid after the country has been the victim of a natural disaster.
2. The Project Charter provides a brief description of all elements detailed in this Project Management Plan for the LINEON Village Project, including project objectives, project scope with details of key deliverables, overall project cost and expected duration.
3. In the project scope management plan, it is clearly specified that the project simply concentrates on the works relating to the construction of the various infrastructures planned under the project, namely the access roads, the various buildings (apartments, supermarket, hospital, sports center, local for firefighters and police,), water, electricity, green spaces etc... But the management of the village after the end of the construction works is not included in the framework of this project.
4. The duration of the project extends over five (5) years, from 2025 to 2030. The Gantt chart gives an idea of the distribution of the different activities over this duration.
5. The total cost of the project is estimated at thirty-nine million, four hundred and thirty thousand US dollars (39,430,000.00 USD) with a contingency reserve of 5% or one million nine hundred sixty-seven thousand US dollars (1967000.00 USD).

6. For a better “Quality Management” of the project, in addition to the selection of experienced construction firms, LINEON will hire independent experts to ensure that all quality requirements are met.
7. Project resource management has two components. The first concerns the means specific to the LINEON group team, and the second concerns the construction companies that will be selected to carry out the construction work. Thus, the management of supplies, apart from what concerns basic supplies and materials for the LINEON group team, approximately 95% of purchases will be made by the contracted construction companies.
8. Because this is an innovative project in the area, the communication strategy relies on the involvement of different actors to not only raise awareness among the local population, but also state authorities and financial institutions for the success of the project.
9. The main stakeholders of the project are LINEON Group (Project Sponsor), Project Manager, Construction firms, Project team, independent experts, Haitian Government entities (Regulator), Financial institution, Apartment future owner and resident, Surround population and other Interest groups.
10. The P5 analysis not only ensures responsible execution of the project with regard to the requirements of sustainable development, but also guarantees the quality of the deliverables of the project, even of the project as a whole.

6. RECOMMENDATIONS

1. Although each project is unique, LINEON Group should analyze other similar projects already executed in order to learn lessons for a better execution of the LINEON Village project. As the project unfolds, LINEON Group must analyze the lessons learned at each phase to better move forward.

2. For a better management of the project cost, LINEON Group must ensure that the necessary funds are available on time in order to avoid any avoidable delay in the execution of the project. Because, delays due to unavailability of funds can have considerable impacts on the overall success of the project. LINEON Group should create a special team to support the project manager in his relations with financial institutions.

3. The LINEON group should intensify the strategies for involving local actors, in particular the municipal authorities of the city where the project is implemented, to find the maximum support necessary in order to include the project in a societal approach.

4. To effectively manage the quality of the project, in particular the quality of the project deliverables, it will be decisive that throughout the execution of the project, that mid-way checks are carried out to ensure that at each stage, that the deliverables respect the predefined quality standards.

5. Regarding the management of the project schedule, the project team and the firm retained for the works and the construction must be on the same wavelength. Thus, not only will the effectiveness of communication be decisive, but the company's commitment to respecting the established deadline will be crucial.

6. Although LINEON Group plans to engage competent consulting firms for the execution of the different parts of the project, and it is these firms that will be responsible for purchasing the necessary construction materials, it would be crucial to define the main lines to harmonize procurement activities with the project execution plan.

7. In the selection of workers for construction activities, although the responsibility rests with contracted construction companies, the Project manager should encourage these companies to give priority to skilled workers from the areas surrounding the project execution space, always to ensure that in all phases, the project contributes to the improvement of living conditions in the region in all respects.

8. Considering the influence of stakeholders on the success of the project, it would be important for the project team to pay particular attention to four (4) main actors. These are the inhabitants of the project area, the customers, the government and the financial institutions. Fluid communication is needed with them to make them aware of the relevance of the project for the community and the need to provide their full cooperation to ensure its success.

9. It would be important that training and awareness sessions be carried out on sustainable project management, in order to help the parties concerned to clearly identify the standards in this area to ensure that the LINEON Village project is carried out by applying the principles sustainable project management.

7. VALIDATION OF THE FGP IN THE FIELD OF REGENERATIVE AND SUSTAINABLE DEVELOPMENT

According to Müller, E. and Gabel, M. (2005) Regenerative development (RD) is the use of resources to improve the well-being of the company in a way that strengthens the capacity of the support systems necessary for the future of growth. Unlike sustainable development, which is a half -vast approach to the vast problems in order to maintain the status quo by seeking only to maintain the capacity which is somehow incomplete by considering the present as the best that we can do. He has a mechanistic vision of the world "by asking only requests:" How can we solve this problem in such a way that we support or do not injure the underlying support systems? With a vision of the holistic world, the approach of regenerative development aims to strengthen capacity and transcend the objectives of sustainability, by seeking total well-being and the improvement of the productivity. Asking: "How can we solve this problem in order to improve the capacity of underlying support systems? "Regenerative development" is to "sustainable development", which SD is to traditional economic development.

According to an article published in Lapresse.ca (2021), experts warn that anarchic sprawl of slums on mangroves which protect Haiti from the assaults of the ocean announces a disaster, aggravating the country's vulnerability with meteorological events and exposes the populations who live there in great precariousness. Cap-Haitian, the second city of Haiti, is one of the most affected and exhibited areas with a population that has more than doubled for 20 years, because its expansion is largely on the mangrove, which is a natural barrier which protected it from the sea. In addition, the majority of the hills are deforested, and we

only see small anarchically built houses. The image below gives an idea of the gravity of the situation.

Figure 4: An example of a popular neighborhood in Cap-Haitien built on the mangrove.

Source: Lapresse.ca, https://www.lapresse.ca/international/caraibes/2021-02-22/la-presse-en-haiti/catastrophic-ecologique-en-zones-cotieres.php

This project to build social housing in the north of Haiti is a regenerative development initiative in the sense that it helps to fight against a hut phenomenon which in particular affects the notes and colins of the city of Cap-Haitien. Currently, people have built anarchically by the sea and on colins, not only do they destroy mangrove, but also, they aggravate the undressing by destroying the trees to build their houses which cause erosion, especially during periods of precipitation.

Thus, with the realization of this project, it will be possible to recover more easily the dimensions and the colins for the reforestation and regeneration projects of the maritime ecosystem in these areas currently.

8. BIBLIOGRAPHY

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9. APPENDICES

Appendix 1: FGP Charter

CHARTER OF THE PROPOSED
FINAL GRADUATION PROJECT (FGP)

1. Student name

Dieulin Napoleon

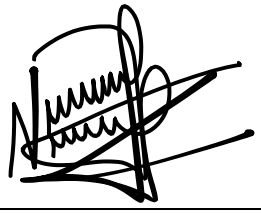
2. FGP name

A project management plan for the development of a social housing project in the northern region of Haiti for the benefit of low-income people

3. Application Area (Sector or activity)

Construction (Social housing)

4. Student signature



Dieulin Napoleon

5. Name of the Graduation Seminar facilitator

Roger Valverde Jimenez

6. Signature of the facilitator

ROGER
EDUARDO
VALVERDE
JIMENEZ
(FIRMA)

7. Date of charter approval

26-02-2023

8. Project start and finish date

28-02-2023	30-04-2023

9. Research question

What should be the content of a good project management plan to facilitate the successful implementation of a social housing project in Haiti?

10. Research hypothesis

A good project management plan can facilitate the development of a social housing project in Haiti that provides housing for low-income people through incremental investment.

11. General objective

To develop a project management plan following PMBOK guidelines that facilitates the development of a social housing project in the northern region of Haiti.

12. Specific objectives

1. Create a project charter to define the key input elements required to develop the project management plan.
2. Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.
3. Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.
4. Develop a Cost Management Plan to plan, estimate and manage the budget for all project activities, deliverables and resources.
5. Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.
6. Develop a Resource Management Plan to identify, acquire and manage all physical and human resources needed to complete the project successfully.
7. Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.
8. Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.
9. Develop a Procurement Management Plan to develop and administer agreements for products and/or services needed from outside the project team.
10. Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by the project and ensure that their expectations are understood, recorded and considered throughout the project life cycle.
11. Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development to minimize and if possible, eliminate any

processes, resources or outcomes that could cause further harm to the environment.

13. FGP purpose or justification

According to Amnesty International (2015), since before the January 2010 earthquake, the housing sector in Haiti was already in crisis, as the country lacked approximately 700,000 homes and 250,000 homes were destroyed or heavily damaged by the earthquake.

Due to the country's precarious economic situation for decades, people no longer want to live in the countryside and are heading to the capital Port-au-Prince or other major cities in the hope of finding opportunities or services not available in the countryside. Thus, these cities have become more and more overcrowded slums with anarchic constructions, even in areas with a tourist vocation or upgraded neighborhoods.

Social housing projects with constructions respecting seismic standards and basic infrastructures are more and more necessary in Haiti, particularly in the North region in order to facilitate low-income people to stay in houses with modern comfort and at the same time fight against the slum phenomenon.

14. Work Breakdown Structure (WBS). In table form, describing the main deliverable as well as secondary, products or services to be created by the FGP.

1. FGP
    1.1 FGP profile
        1.1.1 Introduction
        1.1.2 Theoretical framework
        1.1.3 Methodological framework
        1.1.4 Preliminary bibliographical research
        1.1.5 Annexes (FGP schedule, FGP WBS, FGP Charter)
    1.2 FGP development
        1.2.1 Develop the project charter
            1.2.1.1 Collecting required information about the project.
            1.2.1.2 Analyze and synthesize using project charter tools and techniques
            1.2.1.3 Project charter writing.
        1.2.2 Develop the scope Management Plan
            1.2.2.1 Collect the required inputs
            1.2.2.2 Generate the WBS
            1.2.2.3 Scope management plan writing
        1.2.3 Develop the Schedule management plan
            1.2.3.1 Collect the required inputs
            1.2.3.2 Schedule plan writing
        1.2.4 Develop the cost Management Plan
            1.2.4.1 Collect the required inputs
            1.2.4.2 Cost management plan writing
        1.2.5 Develop the quality Management Plan
            1.2.5.1 Collect the required inputs
            1.2.5.2 Quality management plan writing
        1.2.6 Develop the Resource Management Plan
            1.2.6.1 Collect the required inputs
            1.2.6.2 Resource management plan writing
        1.2.7 Develop the Communication Management Plan
            1.2.7.1 Collect the required inputs
            1.2.7.2 Communication management plan writing
        1.2.8 Develop the Risk Management Plan
            1.2.8.1 Collect the required inputs
            1.2.8.2 Risk management plan writing
        1.2.9 Develop the procurement Management Plan
            1.2.9.1 Collect the required inputs
            1.2.9.2 Procurement management plan writing
        1.2.10 Develop the Stakeholder Management Plan
            1.2.10.1 Collect the required inputs
            1.2.10.2 Stakeholder management plan writing

1.2.11 Conduct a P5 Impact Analysis
1.2.11.1 Collect the required inputs
1.2.11.2 P5 Impact Analysis writing
1.2.5 Conclusions
1.2.6 Recommendations
1.2.7 Reference lists
1.2.8 Annexes
1.2.9 Tutor approval for reading.
1.3 Reader's review.
1.4 Board of examiners evaluation.

15. FGP budget

Activities	Estimate cost in USD
Project design overview	150.00
FGP Development	500
Internet, foods,	150.00
Information processing	50.00
Total estimate cost	**950.00**

16. FGP planning and development assumptions

- There are enough documents available on the issue of social housing in Haiti.
- The researcher will work at least 20 times per week on the FGP development process.
- All templates and guidelines for drafting the project management plan are available and mastered by the researcher.
- The tutor will be available to provide all necessary support during the FGP development process.

17. FGP constraints

- A social housing project management plan requires a lot of work regarding to project scope.
- The maximum time to finalize the FGP is 12 weeks.
- There are not enough examples of management plans for social housing projects in Haiti
- The development of the FGP must follow the exact guidelines provided by the UCI board.

18. FGP development risks

- If there are storms or other crises in the researcher's country, the internet connection may be unavailable, which could delay the development of deliverables.
- Some information may be difficult to collect and this will affect the accuracy of the data that will be used in the development of the FGP
- The development of the FGP may require movement to Port-au-Prince, and it's really difficult to go there because of insecurity.

19. FGP main milestones

Deliverable	**Finish estimated date**
1.1 FGP profile	28-02-2023
1.1.1 Introduction	19-02-2023
1.1.2 Theoretical framework	05-02-2023
1.1.3 Methodological framework	12-02-2023
1.1.4 Preliminary bibliographical research	19-02-2023
1.1.5 Annexes (FGP schedule, FGP WBS, FGP Charter)	28-02-2023
1.2 FGP development	25-06-2023
1.2.1 Develop the project charter	19-03-2023
1.2.2 Develop the scope Management Plan	26-03-2023
1.2.3 Develop the Schedule Management Plan	02-04-3023
1.2.4 Develop the Cost Management Plan	10-04-2023
1.2.5 Develop the Quality Management Plan	17-04-2023
1.2.6 Develop the Resource Management Plan	24-04-2023
1.2.7 Develop the Communication Management Plan	30-04-2023
1.2.8 Develop the Risk Management Plan	07-05-2023
1.2.9 Develop the Procurement Management Plan	14-05-2023
1.2.10 Develop the Stakeholder Management Plan	21-05-2023
1.2.11 Conduct P5 Analysis	28-05-2023
1.2.5 Conclusions	04-06-2023
1.2.6 Recommendations	04-06-2023
1.2.7 Reference lists	04-06-2023
1.2.8 Annexes	04-06-2023
1.2.9 Tutor approval for reading.	
1.3 Readers review	
1.4 Board of examiners evaluation	

20. Theoretical framework

20.1 Estate of the "matter"

In Haiti, Cap-Haitien is one of the cities most affected by this phenomenon of slums and also one of the most threatened by the increase in the rate of internal migration. According to the IDB (2017), with an estimated population of 404,766 in 2017 over an area of 53.5 km2, Cap-Haitien is the second largest city in Haiti after Port-au-Prince.

Moreover, due to the non-existence of a national cadastre, it is very difficult to buy land in Haiti without raising land disputes. Because only the Haitian government is less likely to be evicted from land due to land disputes. Thus, it is very difficult for someone who does not already have too many financial means, to take the risk of acquiring land, if he does not have some insurance on the history of the property. It's always better when the government declares a portion of land of public utility to promote the realization of social projects like this one. As shown in the figure below, the property registration process is quite lengthy in Haiti.

Thus, there is an urgent need for the government to join forces with civil society organizations in order to encourage or implement major social housing projects that will make it possible to combat the phenomenon of slums and eliminate its consequences which are detrimental to the development of the towns concerned, and even of the country in general. It is with this in mind that this social housing project is being developed in the northern region of Haiti, in order to serve as a model for other similar initiatives in other regions of the country.
In order to complete this section several research activities can be used: bibliographical (reports, thesis, books or magazines, interviews to experts of clinic functionaries, field observation, etc.

20.2 Basic conceptual framework

Project management, Project Management Plan, Project Management Knowledge Areas, Social Housing, Low-income people, sustainable design and construction, Slum, City.

21. Methodological framework

Objective	Name of deliverable	Information sources	Research method	Tools	Restrictions
Create a project charter to define the key input elements required to develop the project management plan.	Project Charter	Books, reports from governments and other organizations, research articles from journals and websites.	To describe the basic elements about the project to properly create the project chapter.	Expert Judgement, Meetings	
Develop a Scope Management Plan to establish the work required, and only the work required, to complete the project successfully.	Scope management plan	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project scope	Expert Judgement, Data analysis, Meetings	
Develop a Schedule Management Plan to define the timeline for the project deliverables and ensure a timely completion of the project.	Schedule Management Plan	Meetings	To analyze required data relating to the project schedule	Expert Judgement, Meetings	
Develop a Cost Management Plan to plan, estimate, and manage the budget for all project activities, deliverables, and resources.	Cost management plan	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project cost	Expert Judgement, Meetings	

Develop a Quality Management Plan to ensure that all project deliverables meet stakeholders' expectations.	Quality management plan	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project quality	Expert Judgement, Meetings	
Develop a Resource Management Plan to identify, acquire, and manage all physical and human resources needed to complete the project successfully.	Resource management plan	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project resources	Expert Judgement, Meetings	
Develop a Communications Management Plan to ensure an effective communication with project stakeholders and for recording all project communications.	Communication Management plan	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project communication	Expert Judgement, Meetings	
Develop a Risk Management Plan to increase the probability/impact of positive risks and decrease the probability/impact of negative risks.	Risk Management Plan	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project risks	Expert Judgement, Meetings	
Develop a Procurement Management Plan to develop and administer agreements for products and/or services needed from outside the project team.	P5 Analysis	Meetings, books, reports from governments and other organizations	To analyze required data relating to the project procurement	Expert Judgement, Meetings	
Develop a Stakeholder Management Plan to identify all groups and/or individuals who would potentially be affected by	Project Charter	Meetings, books, reports from government	To analyze required data relating to the	Expert Judgement, Meetings	

the project and ensure that their expectations are understood, recorded, and considered throughout the project life cycle.		s and other organizations	project Stakeholders		
Conduct a P5 Impact Analysis to ensure that the FGP actively complies with the principles of sustainable development to minimize and if possible eliminate any processes, resources, or outcomes that could cause further harm to the environment.	Scope management plan	Meetings, books, reports from governments and other organizations	To describe the project impact relating to the principles of regenerative development	Expert Judgement, Meetings	

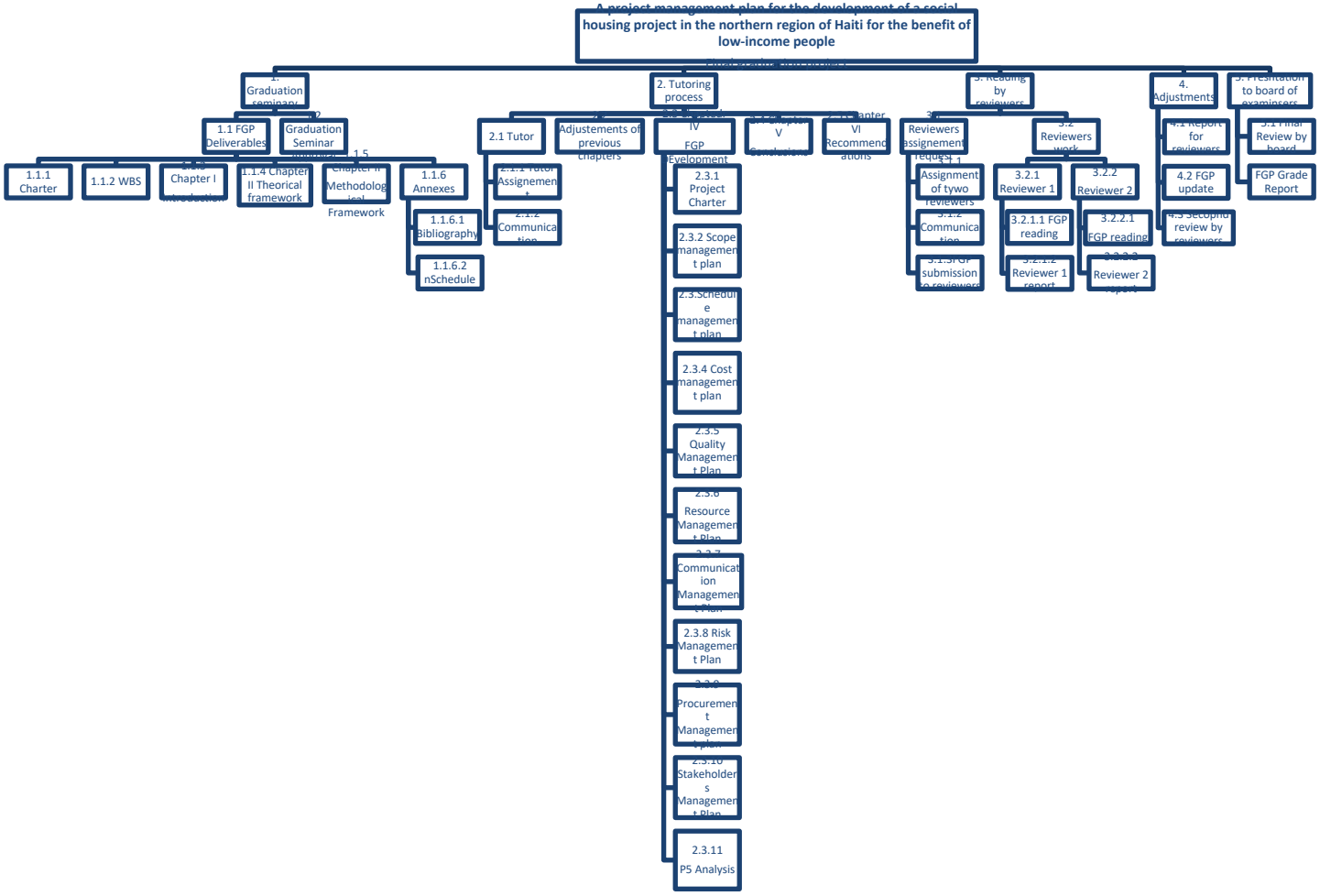
22. Validation of the work in the field of the regenerative and sustainable development.

According to an article published in Lapresse.ca (2021), experts warn that anarchic sprawl of slums on mangroves which protect Haiti from the assaults of the ocean announces a disaster, aggravating the country's vulnerability with meteorological events and exposes the populations who live there in great precariousness. Cap-Haitian, the second city of Haiti, is one of the most affected and exhibited areas with a population that has more than doubled for 20 years, because its expansion is largely on the mangrove, this natural barrier which protected it from the sea. In addition, the majority of the hills are deforested, and we only see small anarchically built houses. The image below gives an idea of the gravity of the situation.

Figure 4: An example of a popular neighborhood in Cap-Haitien built on the mangrove.

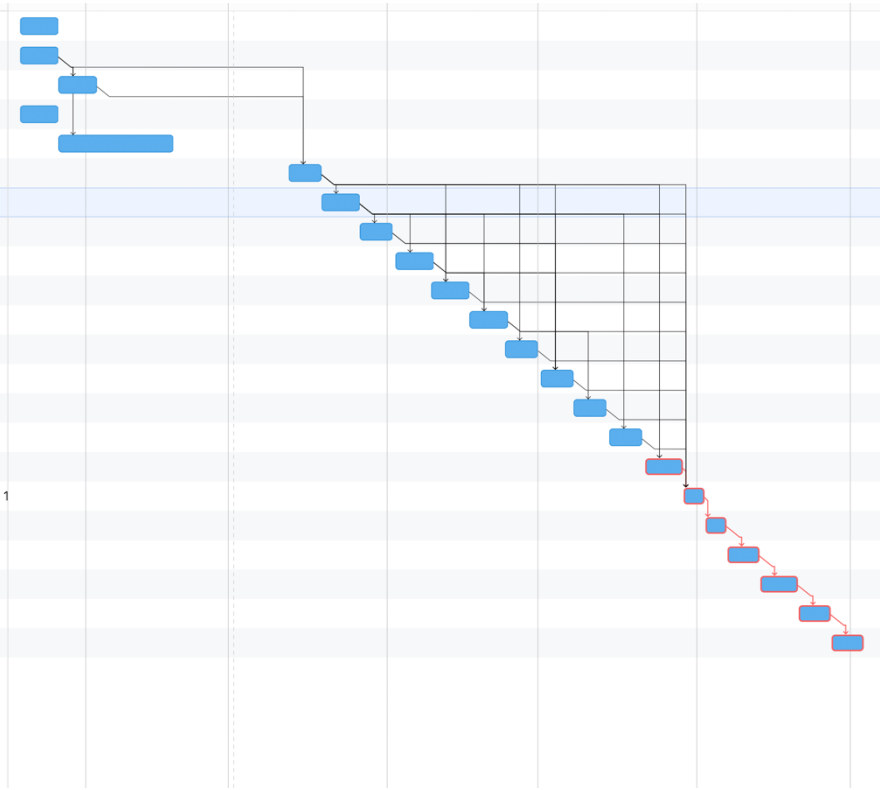
This project to build social housing in the north of Haiti is a regenerative development initiative in the sense that it helps to fight against a hut phenomenon which in particular affects the notes and colins of the city of Cap-Haitien. Currently, people are built anarchically by the sea and on colins, not only do they destroy mangrove, but also, they aggravate the undressing by destroying the trees to build their houses which cause erosion, especially during periods of precipitation.

Appendix 2: FGP WBS



Appendix 3: FGP Schedule

2	Introduction	19/01/2023	26/01/2023	
3	Theoretical framework	19/01/2023	26/01/2023	
4	Methodological framework	26/01/2023	02/02/2023	3
5	Preliminary bibliographical research	19/01/2023	26/01/2023	
6	Annexes (FGP schedule, FGP WBS, FGP Charter)	26/01/2023	17/02/2023	3
8	Develop the project charter	13/03/2023	19/03/2023	3; 4
9	Develop the scope Management Plan	19/03/2023	26/03/2023	8
10	Develop the Schedule Management Plan	27/03/2023	02/04/2023	9
11	Develop the Cost management plan	03/04/2023	10/04/2023	9
12	Develop the Quality Management Plan	10/04/2023	17/04/2023	8; 9
13	Develop the Resource Management Plan	17/04/2023	24/04/2023	9; 11
14	Develop the Communication Management Plan	24/04/2023	30/04/2023	8
15	Develop the Risk Management Plan	01/05/2023	07/05/2023	8; 9; 10; 11
16	Develop the Procurement Management Plan	08/05/2023	14/05/2023	13
17	Develop the Stakeholder Management Plan	15/05/2023	21/05/2023	9
18	Conduct P5 Analysis	22/05/2023	29/05/2023	8; 9
19	Conclusions	29/05/2023	02/06/2023	8; 9; 10; 11; 12; 13; 14; 15; 1
20	Recommendations	02/06/2023	06/06/2023	19
21	Annexes	07/06/2023	13/06/2023	20
22	Tutor approval for reading	13/06/2023	20/06/2023	21
23	Readers review	21/06/2023	27/06/2023	22
24	Board of examiners evaluation	27/06/2023	03/07/2023	23



Appendix 4: Preliminary bibliographical research

Sources	**Reasons**
Amnesty International Publications (2015), 15 minutes to leave: denial of the right to adequate housing in post-quake Haiti, Amnesty International Publications International Secretariat, www.amnesty.org	Provides General information's about Housing issues in Haiti before and after the earthquake of 2010
Deuskar, C., B. P. Stewart, and N. Lozano-Gracia. 2016. "*Defining Urban Areas in Haiti."* Working Paper, World Bank, Washington, DC.	General information about social housing
Hassan, Carlos Peña. (2018, february 20), Community-led infrastructure: A model for social housing?, unops, https://www.unops.org/news-and-stories/insights/community-led-infrastructure-a-model-for-social-housing	Information about social housing
Gowan, S. & Cooper, R.(N/D) Social housing in the united states	To find information about social Housing
Joint Center for Housing Studies, (2017), America's Rental Housing http://www.jchs.harvard. edu/research/publications/americas-rental-housing-2017	Information about housing issues in the Unitated state
Port-au-Prince Neighborhood Housing (2019) Independent Evaluation Group, World Bank Group	Specific information about housing in Port-au Prince
Joint Center for Housing Studies, (2017), America's Rental Housing http://www.jchs.harvard. edu/research/publications/americas-rental-housing-2017	Rent Housing issues.
Project Management Institute. (2017). A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) – sixth Edition, Project Management Institute, Inc.	All information about project management principles and knowledge areas.

Project Management Institute. (2021). A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) - Seventh Edition, Project Management Institute, Inc.	All information about project management principles, knowledge areas and domains
REEVES, P. (2001), *An Introduction to Social Housing,* Elsevier Ltd.	Information about social Housing
UN-Habitat (2018). SDG Indicator 11.1.1 Training Module: Adequate Housing and Slum Upgrading. United Nations Human Settlement Programme (UN-Habitat), Nairobi.	Social Housing issues in Haiti.
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Project Management Institute. (2021). A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) - Seventh Edition, Project Management Institute, Inc.	All information about project management principles, knowledge areas and domains
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UN-Habitat (2018). SDG Indicator 11.1.1 Training Module: Adequate Housing and Slum Upgrading. United Nations Human Settlement Programme (UN-Habitat), Nairobi.	Social Housing issues in Haiti.

Appendix 5: Overview of LINEON Village houses design