UNIVERSIDAD PARA LA COOPERACIÓN INTERNACIONAL
(UCI)

PROJECT MANAGEMENT PLAN FOR THE WASTE RECOVERY PROJECT

GAETANE CLAUDE GARCON

FINAL GRADUATION PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
MASTER'S IN PROJECT MANAGEMENT (MPM) DEGREE

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MAY, 2022

APPROVAL PAGE

UNIVERSIDAD PARA LA COOPERACIÓN INTERNACIONAL
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DEDICATION

This final project is firstly dedicated to the Lord, my father, who has been always with me throughout my life to assist and guide me. He helped me surpass the anxieties and stressful situations that I have been through during the beginning of this program until the preparation of this project. I also dedicate this paper to my parents, John and Claudy Garçon, who fully provided me their unconditional support to pursue this; to my fiancé, Morhann Germain; and my 3 children, Noah, Galiyah, and Jovhann. Without them, I wouldn't have that motivation to reach that end line.

ACKNOWLEDGMENTS

I would like to express my thanks to all the teachers I encountered during this program for giving me this great opportunity to improve myself and my knowledge through this program. Without their outstanding expertise, I would not comprehend and master this program.

I also express my gratitude to my tutor, Mr. Carlos Castro, for providing me with all the support he could in a timely manner. Without his golden advice and responsive feedback, I would have been behind schedule and would not have had the chance to do this wonderful project.

Additionally, I would like to thank the academic staff who contributed a lot to make this program happen. Collaborating with them showed me how important it was to work as a team. I learned that we are all part of a chain, and we need to work with the other links so we can evolve and move forward together.

Finally, I would like to specially thank God and my parents who have been supporting me since my childhood until today. I have become the person I am today thanks to their guidance. Thank you, God, for giving me this courage, this determination, and this strength to break all strongholds that could have held be back from going through this overall program.

ABSTRACT

The objective of this paper is to develop an integrated management plan for the waste recovery project so that it can improve the living conditions of the residents of the Drouillard area by reducing poverty and creating sustainable employment due to the recycling of the waste process that will be undertaken. The Drouillard area is in one of the least favorable areas of the metropolitan region, and it is prone to flooding during rainy days and to the blockage of irrigation canals. The residents of Drouillard are not spared from this dreadful situation that causes horrible living conditions in all aspects.

The final product of this project entails an elaboration of an integrated management plan for the waste recovery project. It aims to cover and develop all management plan processes and components that involve management plans for the scope, schedule, costs, quality, resources, communication, risks, procurement, and stakeholders. This is done through the analytical and qualitative methodology (interviews with relevant actors).

As a result of the project, its need for the Drouillard residents is revealed, in life-saving terms if it is undertaken as planned, and furthermore, it goes beyond its objectives. For that purpose, it is important to develop this comprehensive management plan that will strengthen the internal organization procedures. To successfully complete the activities throughout the stages, it is recommended to establish a roadmap that will ensure that all of the processes are designed and followed as they should be.

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ABBREVIATIONS AND ACRONYMS

AFL	American Federation of Labour
CEO	Chief Executive Officer
CTA	Chief Technical Advisor
COQ	Cost of Quality
DWPP	Decent Work Protection Program
FGP	Final Graduation Project
INFP	Institut National de Formation Professionnelle
ILO	International Labour Organization
OALD	Oxford Advanced Learner's Dictionary
MAST	Ministry of Social Affairs and Labor
PERT	Program Evaluation Review Technique
PO	Purchase Order
PMI	Project Management Institute
PMBOK	Project Management Body of Knowledge Guide
PES	Public Employment Services
RFQ	Request for Quote
RBS	Risk Breakdown Structure
SAKALA	Sant Kominote Altenatif Lape
SONAPI	Société Nationale des Parcs Industriels
SHIF	Staff Health Insurance Funds
UN	United Nations
UCI	Universidad para la Cooperación Internacional
WR	Waste Recovery
WWI	World War I
WBS	Work Breakdown Structure

EXECUTIVE SUMMARY

The unstable political situation of Haiti was tremendously affecting the living conditions of most vulnerable residents in the metropolitan region. Those living in Drouillard were the most targeted, as they could not have access to properly hygienic services, given their poor conditions. The government entities failed to support their medical and sanitary needs.

This resulted in dirty streets, clogged canal irrigation pipes, the spread of severe illnesses, and flooding during rainy times. When the situation kept on worsening, the only option left was to burn the garbage with homemade incinerators, which turned out to be dangerous.

This solution, despite everything, was not far from being a sustainable and ecologically satisfactory solution. After visiting the sites, the International Labour Organization decided to come to the rescue and planned a project that would not only improve the living conditions of Drouillard residents but also create jobs in the area. This would incredibly help the people to finally have access to the services they were entitled to.

The final graduation project general objective is to create a project management plan that integrates sustainable principles that will help the waste recovery project to successfully achieve its outcome in the least favorable area of Drouillard. The specific objectives are to develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan; to create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations and so forth; to create a sustainable schedule management plan for assigning duration to work packages that can be tracked; to create a sustainable cost management plan for assigning cost to work packages; to develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion; to create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour; to develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority; to create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications; to develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services; and to develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project.

To find the most relevant information and to better understand the findings during that research, the methodologies that were followed were analytical and qualitative ones. With the analytical method, the sources used were The Project Management Body of Knowledge (PMBOK® Guide) Sixth Edition, reliable websites, and the university platform. On the other hand, the qualitative method was done through interviews with keys actors in the project.

With that being said, based on the objectives stated earlier, it can be concluded that developing a more structured plan for the waste recovery project would not only achieve its

deliverables with the upmost success but also inspire future projects within the International Labour Organization and other external organizations. This could increase the awareness of people's values and perception of how living decently in Haiti should be.

Improving the economic and political of the country could be one of the final outcomes if the waste recovery project reaches its limit by having a strong and integrated management plan. Focusing on sustainability should be number priority as well, given the deep impact it could have on society growth and the continuous human-being evolvement. Hiring the right staff with the right skills would ease the implementation and execution of the venture through the final phase.

It is recommended to establish a clear and proven methodology among the team and the stakeholders so that the implementation and execution processes are done smoothly and aligned with the guidelines and principles of the Project Management Guide. In addition to this, strong communication tools and systems should be prioritized to maintain transparency, accountability, and flexibility when dealing with third-party companies.

1. INTRODUCTION

1.1. Background

The International Labour Organization (ILO, n.d.) stated the following:

> The ILO was created in 1919, as part of the Treaty of Versailles that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it is based on social justice.
>
> The Constitution of the ILO was drafted in early 1919 by the Labour Commission, chaired by Samuel Gompers, head of the American Federation of Labour (AFL) in the United States. It was composed of representatives from nine countries: Belgium, Cuba, Czechoslovakia, France, Italy, Japan, Poland, the United Kingdom, and the United States. The process resulted in a tripartite organization, the only one of its kind, bringing together representatives of governments, employers, and workers in its executive bodies … In 1946, the ILO became a specialized agency of the newly formed United Nations (para. 1).

Today, the Organization is operating in many countries, including Haiti. It runs multiple programmes and projects that are centralized and decentralized. The ILO has integrated many of its existing technical projects into five flagship programmes, designed to enhance the efficiency and impact of its development cooperation with constituents on a global scale.

In Haiti, given the type of this project, the ILO must produce a project management plan for waste recovery that will be helpful in the initiating, planning, executing, monitoring, and closing phases to successfully achieve the specific goals. If completed effectively, this project

will tremendously improve the living conditions of the residents of Drouillard by creating sustainable employment.

1.2. Statement of the Problem

Haiti, as an unstable country politically and economically, does offer a lot of opportunities for projects to serve the minorities in need. However, the problem is that, as the waste recovery is a new project that is planned to be implemented in the least favorable area of the city and that is sanitary-oriented, there are no sufficient management tools to deliver the outcome of the venture. Given the area with a serious shortage of infrastructure, it is crucial to establish strong management tools to allow a smooth collaboration with the team to efficiently plan the activities, tightly control the budget, and closely monitor the deliverables that will have to be submitted throughout the venture's phases.

1.3. Purpose

The purpose of this study is to develop a project management plan for the waste recovery venture. Once developed, this formal document will mostly describe how the project will be executed, monitored, and controlled throughout the phases so that the project managers, teams and the key stakeholders who are involved can keep track of it. It will determine the waste recovery project outcome and indicate how the outcome will be successfully achieved, who will be involved in the project, and how the project will be measured and communicated.

Drouillard, one of the least favorable areas of Port-au-Prince, has been facing severe health condition problems due to the number of debris and waste that has never been collected by the authorities. That resulted in a blockage of the irrigation canals and then in flooding during heavy rains. The residents' health was in danger and started to be affected by contagious

illnesses. The state authorities have not deployed medical rescues whatsoever to remediate the issue. The short-term solution remains as the waste disposal through a calcination process done by volunteers.

However, this solution is far from being a sustainable and ecologically satisfactory solution. After visiting the sites, the ILO decided to come to the rescue. They are planning a project that will not only improve the living conditions of Drouillard residents but also create jobs in the area. This could be a stepping-stone not only for other humanitarian organizations present in the country but also for the government entities that lack commitment towards its population.

To carry out the project successfully, writing a comprehensive management plan is crucial. The project manager will break down the project into measurable deliverables that will be approved by the stakeholders.

1.4. General Objective

To create a project management plan that integrates sustainable principles that will help the waste recovery project to successfully achieve its outcomes in the least favorable area of Drouillard.

1.5. Specific Objectives

1. To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan
2. To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project
3. To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations
4. To create a sustainable time management plan for assigning duration to work packages that can be tracked
5. To create a sustainable cost management plan for assigning cost to work packages
6. To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion
7. To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour
8. To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority
9. To create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications
10. To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who are able to procure sustainable goods and services

2. THEORETICAL FRAMEWORK

2.1. Enterprise Framework

2.1.1. Enterprise Background

The ILO is the only tripartite UN agency with government, employer, and worker representatives. This tripartite structure makes the ILO a unique forum in which the governments and the social partners of the economy of its member states can freely and openly debate.

> Underlying the ILO's work is the importance of cooperation between governments and employers' and workers' organizations in fostering social and economic progress. The organization aims to ensure that it serves the needs of working women and men by bringing together governments, employers, and workers to set labour standards, develop policies and devise programmes. The very structure of the ILO, where workers and employers together have an equal voice with governments in its deliberations, shows social dialogue in action. It ensures that the views of the social partners are closely reflected in ILO labour standards, policies, and programmes. (ILO, n.d.c, para. 1)

This project is also one of its kind in Haiti, given its sector-orientation. It has been agreed that a more extensive management plan should be elaborated.

2.1.2. Mission and Vision Statements

2.1.2.1. Mission. The ILO (n.d.b) stated the following:

> The International Labour Organization (ILO) is devoted to promoting social justice and internationally recognized human and labour rights, pursuing its founding mission that social justice is essential to universal and lasting peace. By improving working conditions and incomes around the world, the ILO helps ensure that workers everywhere enjoy the benefits of globalization. (para. 1)

2.1.2.2. Vision. To create decent work and improve the economic and working conditions that would provide working people and businesspeople a stake in lasting peace, prosperity, and progress.

The ILO's vision is outlined through these four principles (ILO, n.d.b):

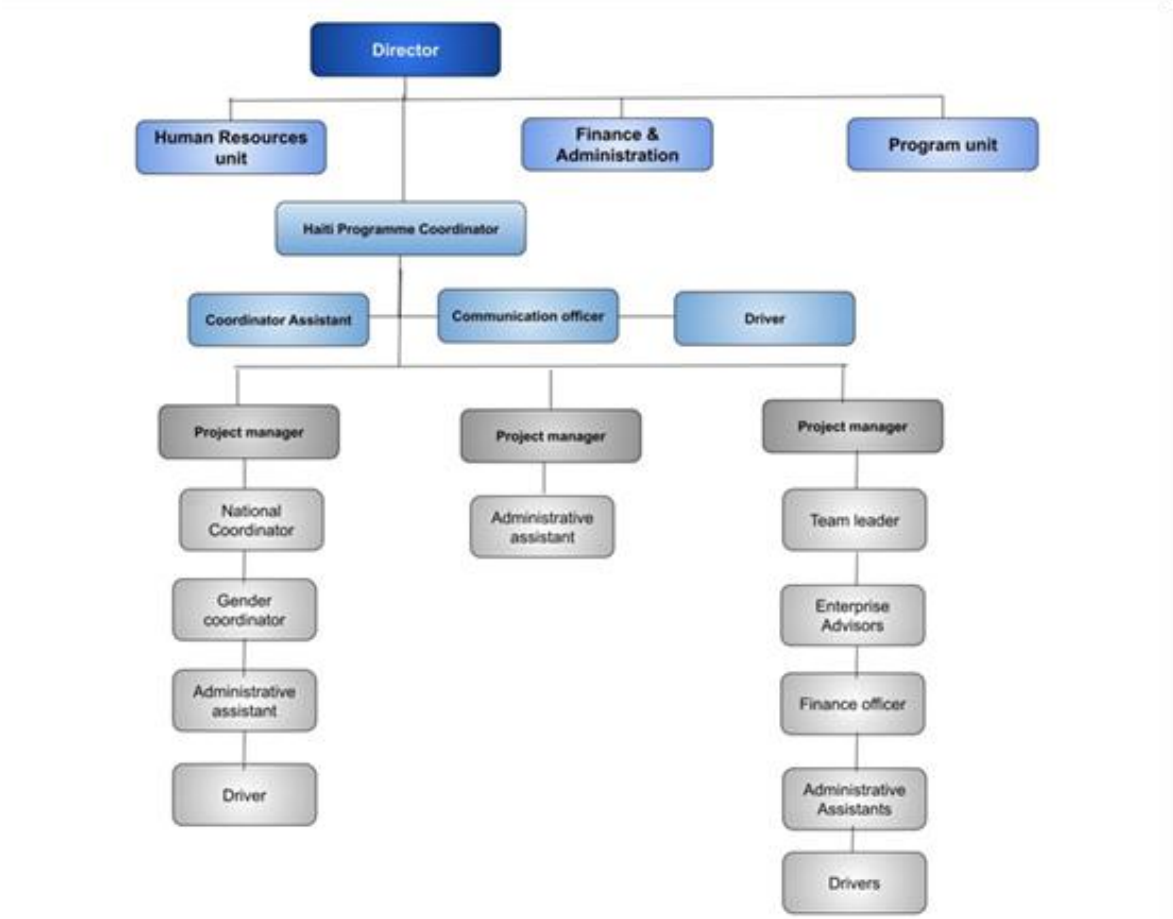
- Gender equality: The ILO vision of gender equality recognizes this goal not only as a basic human right but also as intrinsic to the global aim of decent work for all women and men. This vision is based on the ILO mandate on gender equality as stated in numerous resolutions of the International Labour Conference, the highest policy-making organ of the ILO, as well as relevant International Labour Conventions (ILO, 2012).
- Child labour: This vision is to ensure that every girl and boy can develop physically and mentally to their full potential. Its aim is to stop all work by children that jeopardizes their education and development.

- Discrimination at work: ILO's vision is to establish a workplace that brings together people with different characteristics and treats them fairly to combat stereotypes in society.
- Forced labour: The ILO aims to strengthen global efforts towards combating forced labour, trafficking, and slavery-like practices.

2.1.3. Organizational Structure

The ILO in Haiti is a small organization gathering 31 employees. It is structured by projects led by their own managers whose goals are to achieve the company mission all over the territory. The ILO office is headed by the director of the sub-regional office located in Costa Rica. The management and the operational tasks are done through the human resources unit, the financial and administration unit, and the programming unit (ILO, personal communication, 2022). Below in Figure 1 the company's organizational structure is represented.

Figure 1. *Organizational Structure*



Note. Adapted from ILO (personal communication, 2022).

- **The human resource development department** will be responsible for human resource policies and operations, organization and staff development, medical services, and the staff health insurance funds (SHIF). It will also promote constructive relations with staff representatives.
- **The programming department** will comprise existing PROGRAM functions and the financial monitoring and reporting functions concerning technical cooperation delivery.

- **The financial management department** will be responsible for budget and payment operations, treasury functions, and accounting. The responsibility for procurement, enterprise risk management, and business continuity functions, while being administratively part of the department, will come under the direct authority of the treasurer.

2.1.4. Products Offered

The ILO offers support to its constituents related to the core functions of public employment services (PES) in the form of the following (ILO, 2013):

- Labour market information
- Counselling, referral services, and job matching
- Active labour market programmes
- Design and implementation of unemployment insurances

2.2. Project Management Concepts

2.2.1. Project

The PMBOK® Guide defines a project as “a temporary endeavor undertaken to create a unique product, service, or result. Temporary doesn’t not necessarily mean a project has a short duration. Projects are temporary but their deliverables may exist beyond the end of the project” (Project Management Institute [PMI], 2017, p.4).

A project can be defined in terms of outputs, outcomes, or benefits. The Association for Project Management states the following (APM, n.d.):

> A project is usually deemed to be a success if it achieves the objectives according to their acceptance criteria, within an agreed timescale and budget. Time, cost, and quality are the building blocks of every project.
>
> **Time:** scheduling is a collection of techniques used to develop and present schedules that show when work will be performed.
>
> **Cost:** how are necessary funds acquired and finances managed?
>
> **Quality:** how will fitness for purpose of the deliverables and management processes be assured? (para. 1)

Despite its size and its short duration, the waste recovery project will establish sustainability in Drouillard, in terms of creation of new jobs and a maintenance system to keep the salubrity of the canals. Establishing a strong management plan into this project will reinforce its impact on the society. This will be meant to serve the next generations and create more complex systems to uplift the city.

2.2.2. Project Management

According to the PMBOK Guide, this concept refers to "the application of knowledge, skills, tools and techniques to project activities to meet the project requirements" (PMI, 2017, p.10). This process is important, as it leads the work of the team to achieve all project goals within the given timeframe. Project management differs from the term *management* through its final deliverable that must be presented during a timeline, unlike management that is an on-going process.

Through its five stages, conception and initiation, planning, execution, performance/monitoring, and project closure, project management helps the team to control

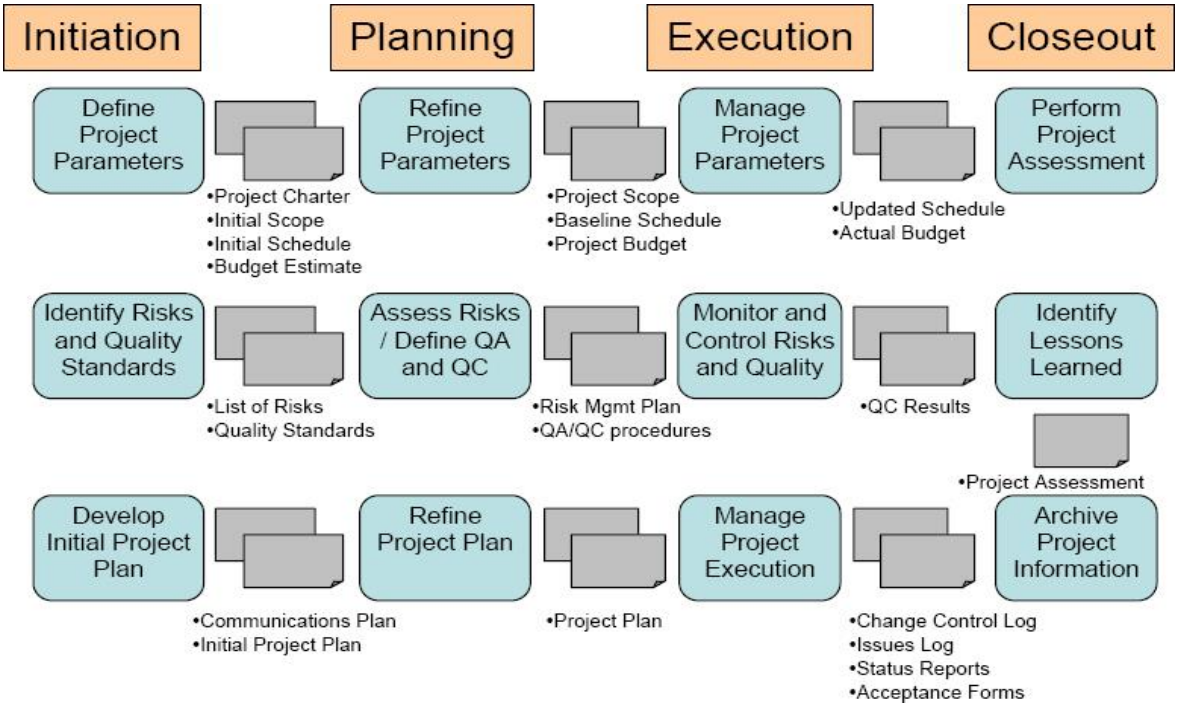
the project budget and save money, improve internal communication, and make better business decisions. As a result, it is being realized that project management creates better results and a happier workplace for the whole team and stakeholders involved in the progress.

2.2.3. Project Life Cycle

"A project life cycle is the series of phases that a project passes through from its start to its completion. It provides the basic framework for managing the project. This basic framework applies regardless of the specific project work involved" (PMI, 2017, p.19).

On a paper that was presented to the PMI in 2004 in a conference during a Global Congress, Jonathan Blake stated that a project life cycle "consists of four main phases each comprising certain processes, with each process producing certain Project Management deliverables" (Blake, 2004, para. 5). Figure 2 indicates these four phases that entail the initiation, planning, execution, and closure that represent the path of a project.

Figure 2. *Four (4) Project Life Cycle Phases*



Note. From *Project managing the SDLC: using milestones to align project management and system development lifecycles and report project success*, by Blake, J. 2004, In PMI® Global Congress (https://www.pmi.org/learning/library/project-managing-sdlc-8232)

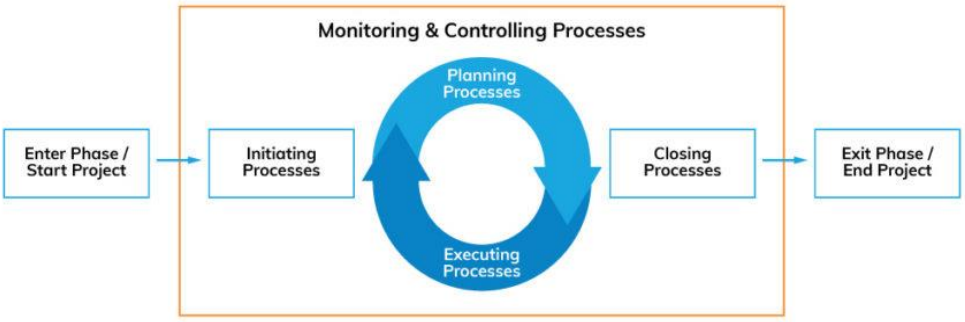
Initiating a project is exploring and elaborating the idea of that project. It is presented to the potential investors who grant their approval, which will help provide the necessary funds. That is the moment the project really begins. The second phase planning implies the documentation of the project plans, the definition of the project deliverables, and the creation of the schedule. Through the project charter, these elements were clearly explained. During the execution phase, the team works on the products planned and presents them to the investors. It is the longest phase of the project and the more challenging. When the investors accept and approve the products that meet the project objectives and goals, it refers to the last phase, closure.

In the waste recovery project, an establishment of a better management plan will be carried out. This action will be done through the two project phases, initiating and planning, cited below. The first important step that will need to be taken is establishing clear objectives in the planning process reflecting the organization's objectives. Once the management plan is set up, it will help assign roles and specific tasks effectively throughout the life cycle of the project while also communicating significant milestones to keep track of the team's responsibilities and work progress.

2.2.4. Project Management Processes

Figure 3 illustrates the integrated nature of all five project management process groups that are outlined in the PMBOK. Based on the Guide, project management processes are "a systematic series of activities directed toward causing a result where one or more inputs will be acted upon to create one or more outputs" (PMI, 2017, p.18).

Figure 3. *Project Management Processes*



Note. Adapted from the *PMBOK Guide,* by the PMI, 2013. Copyright 2013 by Project Management Institute, Inc.

The elaboration and reinforcement of the project management plan will be done through the initiating and planning phases. These phases will include the 10 knowledge areas that will be outlined below. The waste recovery project, given its orientation, will benefit a lot from this

new structure that will help in providing outstanding services to the community. Figure 4 shows the project management knowledge areas.

Figure 4. *Project Management Knowledge Areas*

Note. Adapted from the *PMBOK Guide,* by the PMI, 2013. Copyright 2013 by Project Management Institute, Inc.

2.2.5. Project Management Knowledge Areas

The PMBOK Guide defines a knowledge area as "an identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools and techniques" (PMI, 2017, p.23).

The management plan that will be elaborated will include the ten (10) knowledge areas explained below:

1. Integration management
2. Scope management
3. Time management
4. Cost management
5. Quality management
6. Resource management
7. Communication management
8. Risk management
9. Procurement management
10. Stakeholder management

2.2.5.1. Project Integration Management

"Project Integration Management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities" (PMI, 2017, p.23).

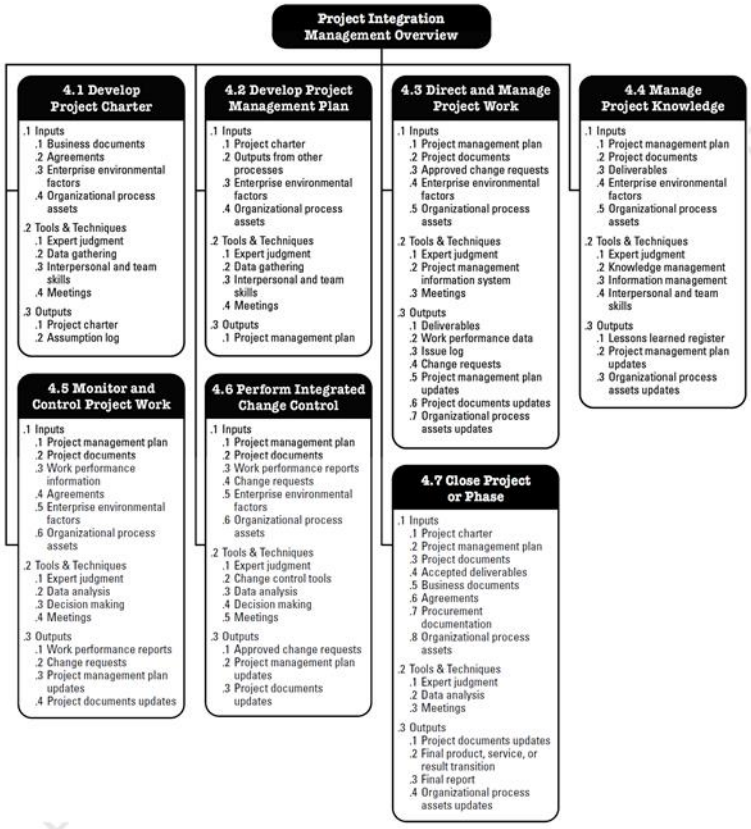
Coordinating tasks, stakeholders, and resources; managing conflicts between different aspects of the project; and evaluating allocated resources are all included in project integration management. The process will be done through different steps with the following deliverables:

1. Project charter
2. Scope statement
3. Project management plan
4. Directing and managing the project work

5. Performing the integrated change control
6. Closing the project or phase

During the integration process, the project charter is developed to provide the project manager the authority to execute the project and to outline the responsibilities of the team members. Figure 5 displays a clear overview of the project integration management process.

Figure 5. *Project Management Body of Knowledge*



Note. From the *PMBOK Guide*, (p. 71), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.2. Project Scope Management

The second knowledge area is defined by the PMBOK Guide as "the processes required to ensure that the project includes all of the work required, and only the work required, to complete the project successfully" (PMI, 2017, p. 129). When the scope is defined at the very beginning of the project, it helps to ease the team's work in managing and making the necessary changes. Having a clear scope helps avoiding these following issues:

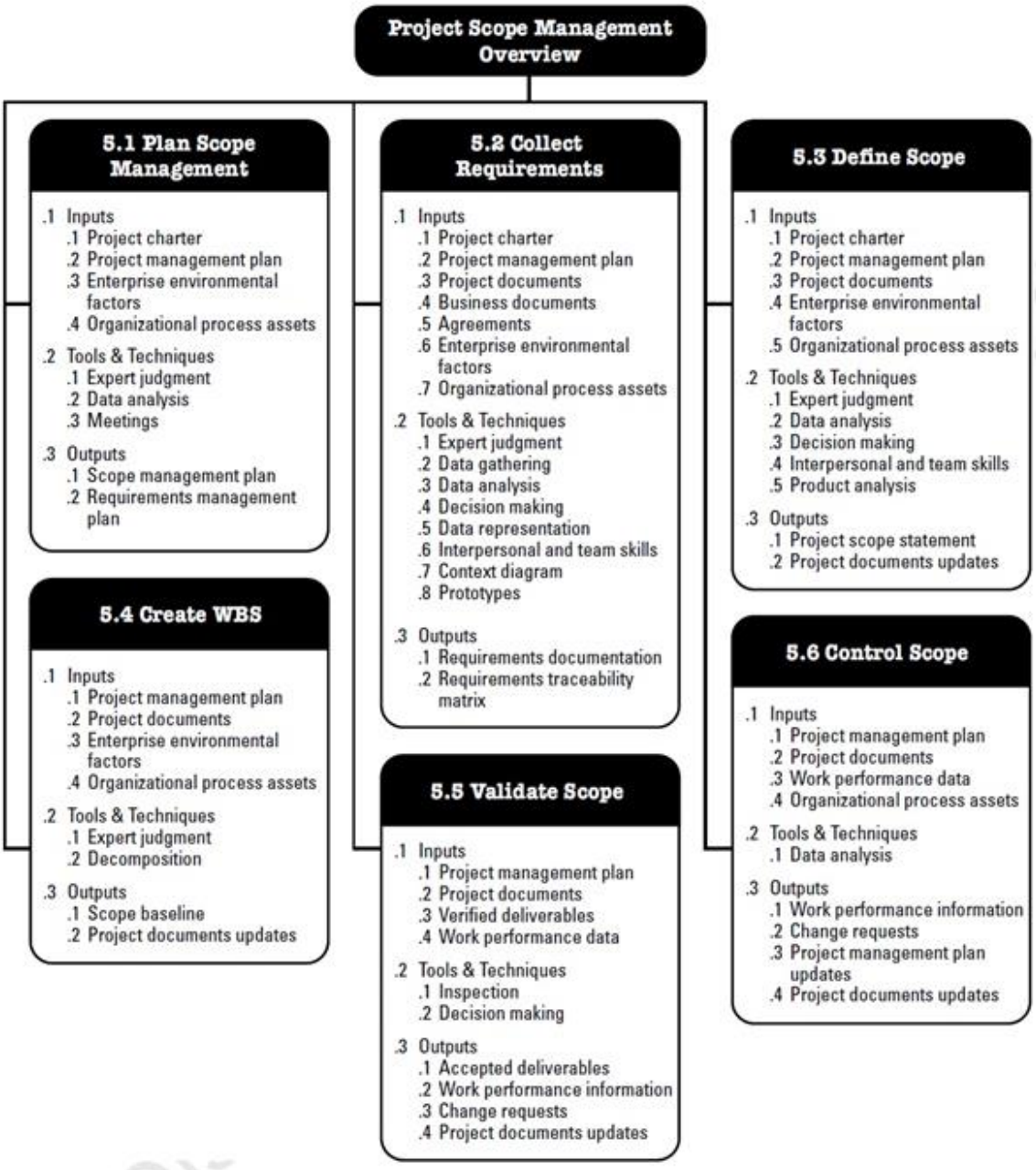
- Needing to make changes regularly
- Pivoting the project direction in the middle of the process
- The outcome ending up not being what was expected
- Missing out the project deadlines
- Going over the budget

The waste recovery project manager will develop a well-defined scope to manage the expectations of its stakeholders involved by staying on track of the progress of the deliverables throughout the life cycle phases. The project scope management goes through these processes:

1. Planning the scope management
2. Collecting requirements
3. Defining the scope
4. Creating the WBS
5. Validating the scope
6. Controlling the scope

Figure 6 shows an overview of the project scope management.

Figure 6. *PMBOK® Guide Project Scope Management Overview*



Note. From the *PMBOK Guide*, (p. 130), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.3. Project Schedule Management

The PMBOK Guide describes this knowledge area as “processes required to manage the timely completion of the project” (PMI, 2017, p. 173). This involves analyzing and developing a schedule and timeline for the project completion. How can time be managed effectively? The easiest way to proceed is through scheduling, which mostly implies an estimation and duration of the tasks/activities planned to be completed. Time management is a key responsibility of the project manager of the waste recovery project, who will make sure it is respected and applied to satisfy the residents of Drouillard as well as the different stakeholders in the picture. This can be done with these processes:

1. Planning the schedule management
2. Defining activities
3. Sequencing activities
4. Estimating the duration of the activities
5. Developing the schedule
6. Controlling the schedule

Figure 7 explains the processes of a project schedule management in more detail.

Figure 7. *PMBOK® Guide Project Schedule Management Overview*

Note. From the *PMBOK Guide*, (p. 174), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.4. Project Cost Management

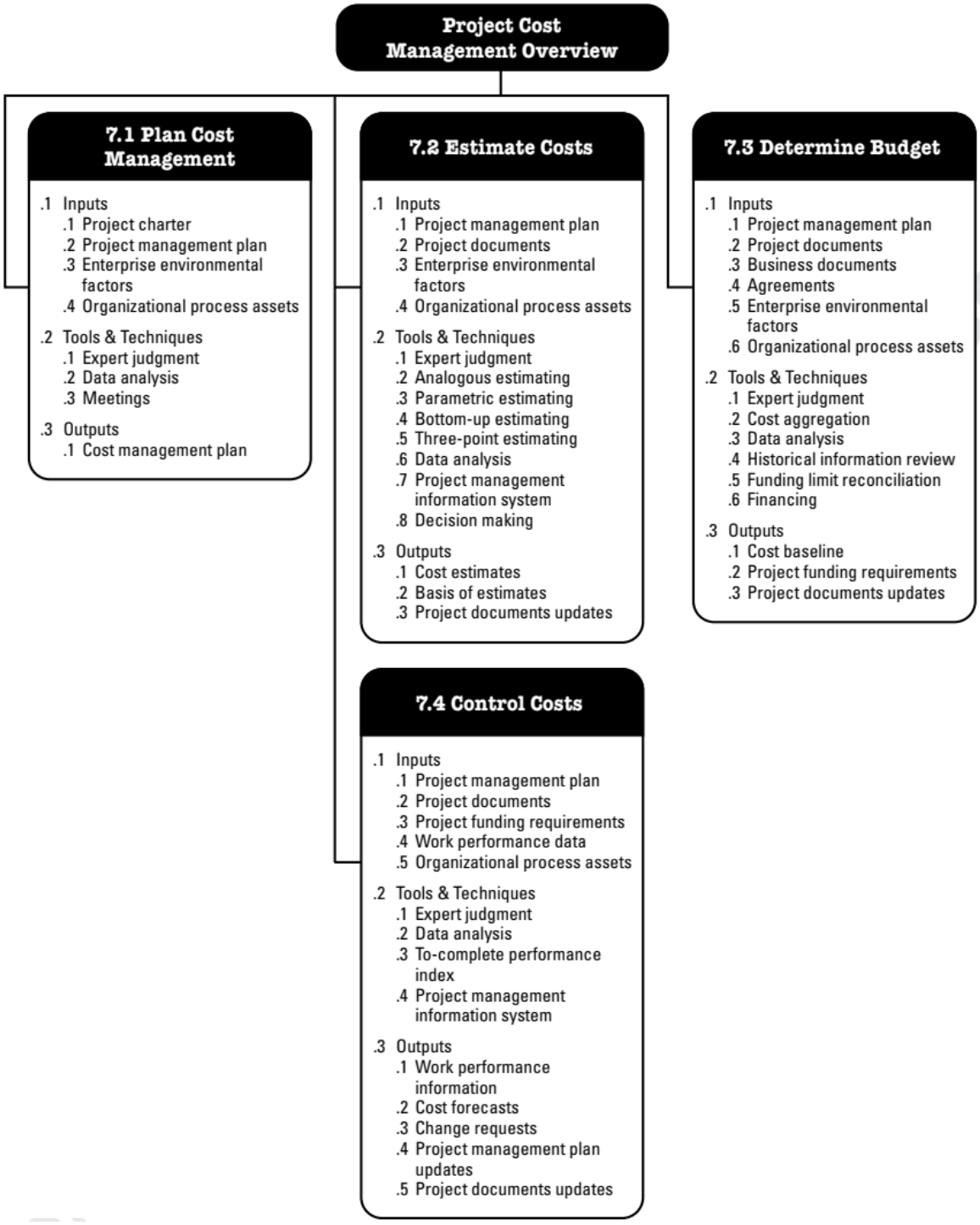
When time is managed with a lack of competencies and knowledge, it becomes a waste of resources. Thus, it affects the cost, as it plays a vital role in time management. According to the PMBOK Guide, project cost management "includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so that the project can be completed within the approved budget" (PMI, 2017, p. 231).

An effective cost management in the waste recovery project will ensure that the manager keeps track of the budget set prior to the execution of the project. Failing to monitor the budget closely could lead to the loss of a large amount of money and costs could go above the project profit. The manager will have to set rigid instructions with the team that will follow the following processes:

1. Planning the cost management
2. Estimating costs
3. Determining the budget
4. Controlling costs

Figure 8 displays an overview of the project cost management.

Figure 8. *PMBOK® Guide Project Cost Management Overview*



Note: From The *PMBOK Guide*, (p. 232), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.5. Project Quality Management

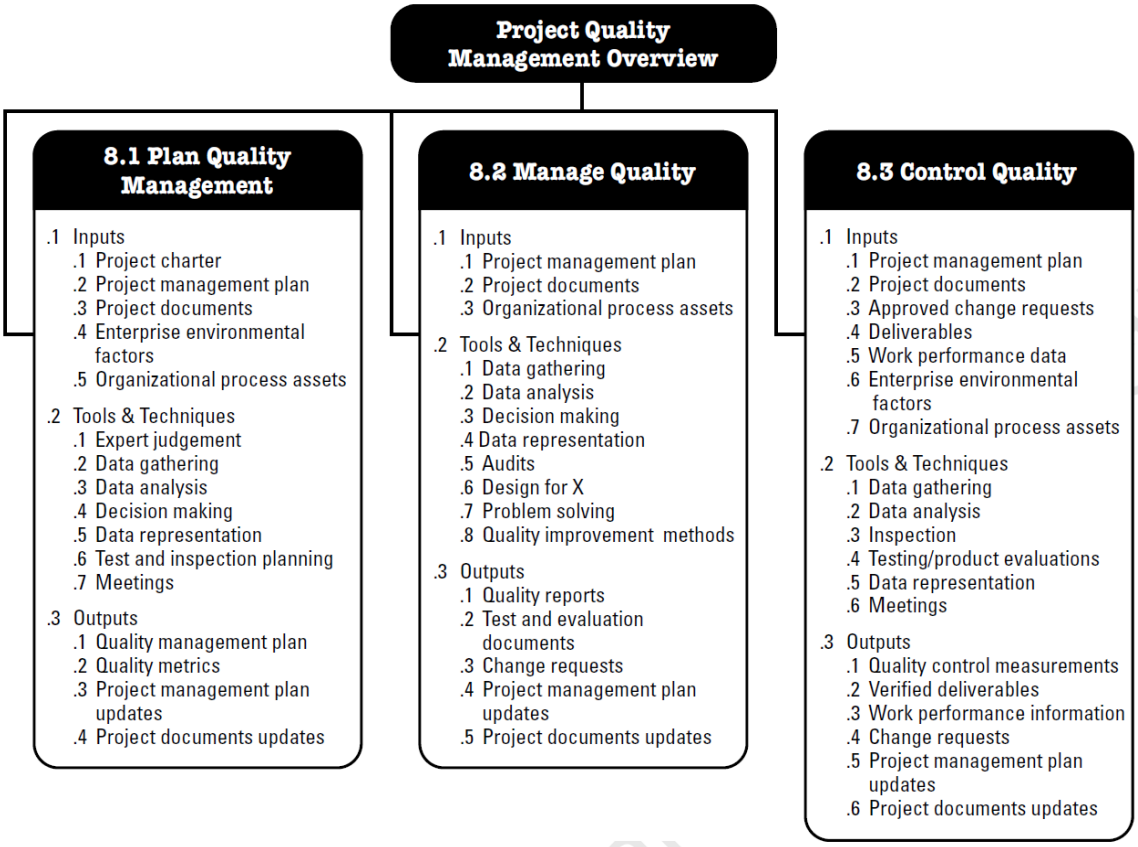
A successful, completed project can be judged by the quality of the services/products that it delivers to its stakeholders. A project, even completed, can last and benefit people and societies for years through the sustainable outcomes/deliverables. According to the PMBOK Guide, “Project Quality Management includes the processes for incorporating the organization’s quality policy regarding planning, managing, and controlling project and product quality requirements in order to meet stakeholders’ objectives” (PMI, 2017, p.271).

The waste recovery manager will make sure to tackle the team to apply the quality standards through the deliverable process. For each activity broken down into small packages, the quality objective will be well-defined, clear, and known by all. Measurement criteria will be set up to know how the quality of these activities will be evaluated.

Figure 9, the project quality management is displayed and cited below:

1. Planning quality management
2. Managing quality
3. Controlling quality

Figure 9. *PMBOK® Guide Project Quality Management Overview*



Note: From the *PMBOK Guide*, (p. 272), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

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2.2.5.6. Project Resource Management

Project delivery can be cumbersome when it comes to controlling the resources allocated. Project resource management helps managers to have a real-time visibility onto the project resources and its use in the project. The knowledge area is defined in the PMBOK Guide as "the processes to identify, acquire, and manage the resources needed for the successful completion of the project" (PMI, 2017, p.307).

The processes implied in the project resource management are the following:

1. Planning resource management
2. Estimating activity resources
3. Acquiring resources
4. Developing the team
5. Managing the team
6. Controlling resources

During the planning of the project, a good resource management plan will be established to help reduce the unnecessary costs and to boost the team productivity. Figure 10 shows a picture of the project resource management components.

Figure 10. *PMBOK® Guide Project Resource Management Overview*

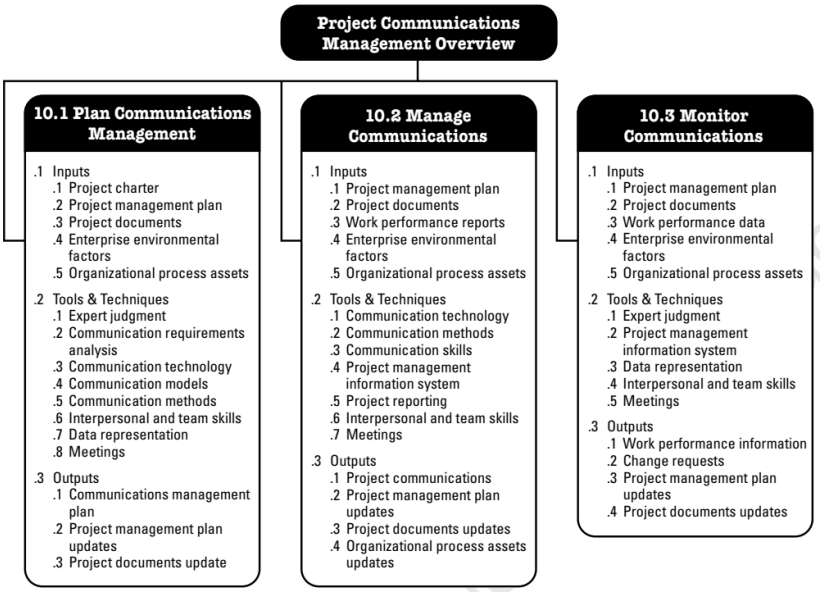
Note: From the *PMBOK Guide*, (p. 308), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.7. Project Communication Management

Project communication management is one of the 10 key knowledge areas in the PMBOK. It helps to establish a clear and professional communication with the team members and the stakeholders. It also determines the tools to be used to convey the messages shared and delivered to everyone involved in the project. The PMBOK Guide states that "the Project Communication Management consists of two parts. The first part is developing a strategy to ensure communication is effective to stakeholders. The second part is carrying out the activities necessary to implement the communication strategy" (PMI, 2017, p.359).

During the waste recovery project planning, managers will establish a good communication plan that will ease the process of identifying the stakeholders, managing their expectations, distributing the information, and reporting performance. Let us see Figure 11 with an overview of this concept below.

Figure 11. *PMBOK® Guide Project Communication Management Overview*



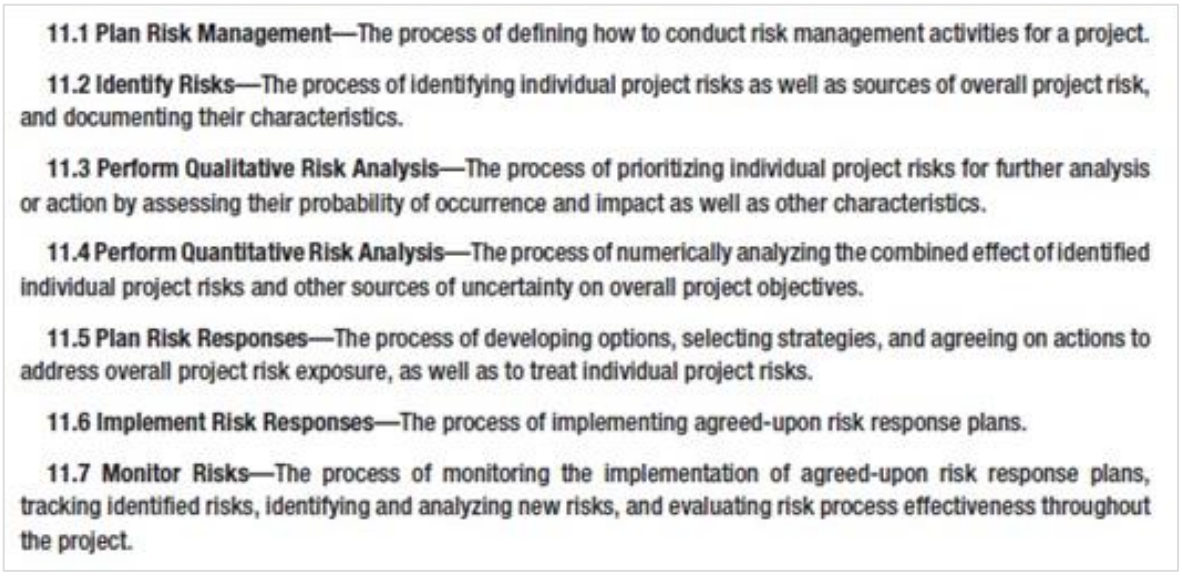
Note: From the *PMBOK Guide*, (p. 308), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.8. Project Risk Management

All undertaken projects are prone to risks no matter what. By definition, a risk is an uncertainty about the effects/implications of an activity or unexpected events that occurred. Risks are part of everyday life, and they cannot be avoided. Our best move is to identify them and mitigate them so that they do not cause irreparable damages.

Projects, in general, are not spared from risks; all undertaken projects are risky. There is no such thing as a zero-risk project. According to the PMBOK Guide, "the objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks in order to optimize the chances of project success" (PMI, 2017, p.395). The processes of the project risk management can be browsed below in Figure 12.

Figure 12. *The PMBOK® Guide Project Risk Management Processes*



Note. From the *PMBOK Guide*, (p. 395), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

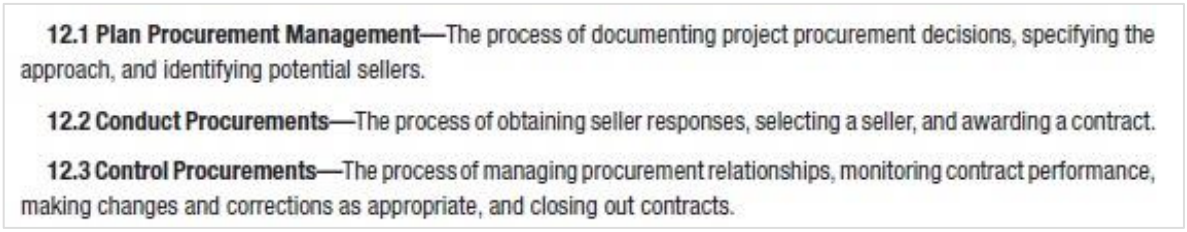
Inside the project, a detailed risk management plan will be elaborated to ensure all risks will be identified and mitigated. Complete documentation will be shared with the team and the stakeholders to emphasize more on the important aspects of the project that could be jeopardized by those potential risks.

2.2.5.9. Project Procurement Management

To ensure the activities planned in the project are executed accordingly, the need of purchasing the right goods and materials is essential. This is where procurement management comes in. The PMBOK Guide defines this knowledge area as "the processes necessary to purchase or acquire products, services, or results needed from outside the project team" (PMI, 2017, p.459).

Among the project procurement management processes that are shown in Figure 13, the project will establish a procurement plan to uplift not only the acquisition of the right tools from the right suppliers but also present high-quality results to the stakeholders.

Figure 13. *PMBOK® Guide Project Procurement Management Processes*



Note. From the *PMBOK Guide*, (p. 395), by the PMI, 2017. Copyright 2017 by Project Management Institute, Inc.

2.2.5.10. Project Stakeholder Management

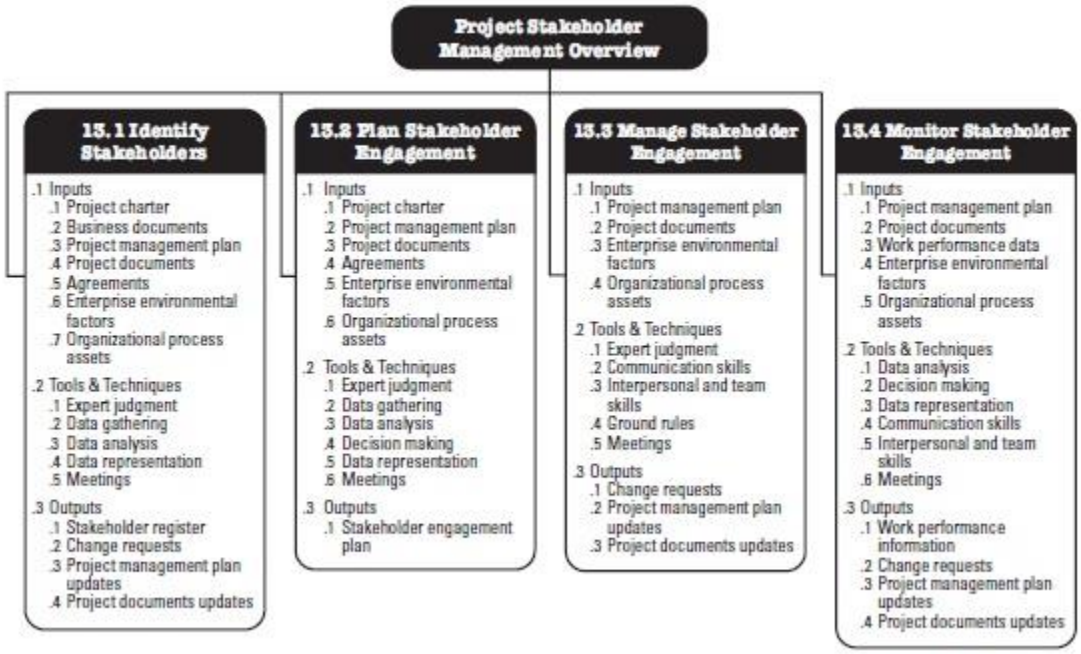
Stakeholders have a strong influence on the on-going process of a project. Their actions determine the outcome of the project. Maintaining good relationships with them and

involving them in the decision-making process of the project is crucial to the success of this project. The PMBOK Guide says the following:

> Project Stakeholder Management includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution. (PMI, 2017, p.503)

Figure 14 illustrates an overview of the project stakeholder management.

Figure 14. *PMBOK® Guide Project Stakeholder Management Overview*



Note: From the *PMBOK Guide*, (p. 504), by the Project Management Institute, 2017. Copyright 2017 by Project Management Institute, Inc.

2.3. Other Applicable Theory: Concepts Related to the Project Topic and Context

2.3.1. United Nations Sustainable Development Goals

The United Nations (n.d.) stated the following:

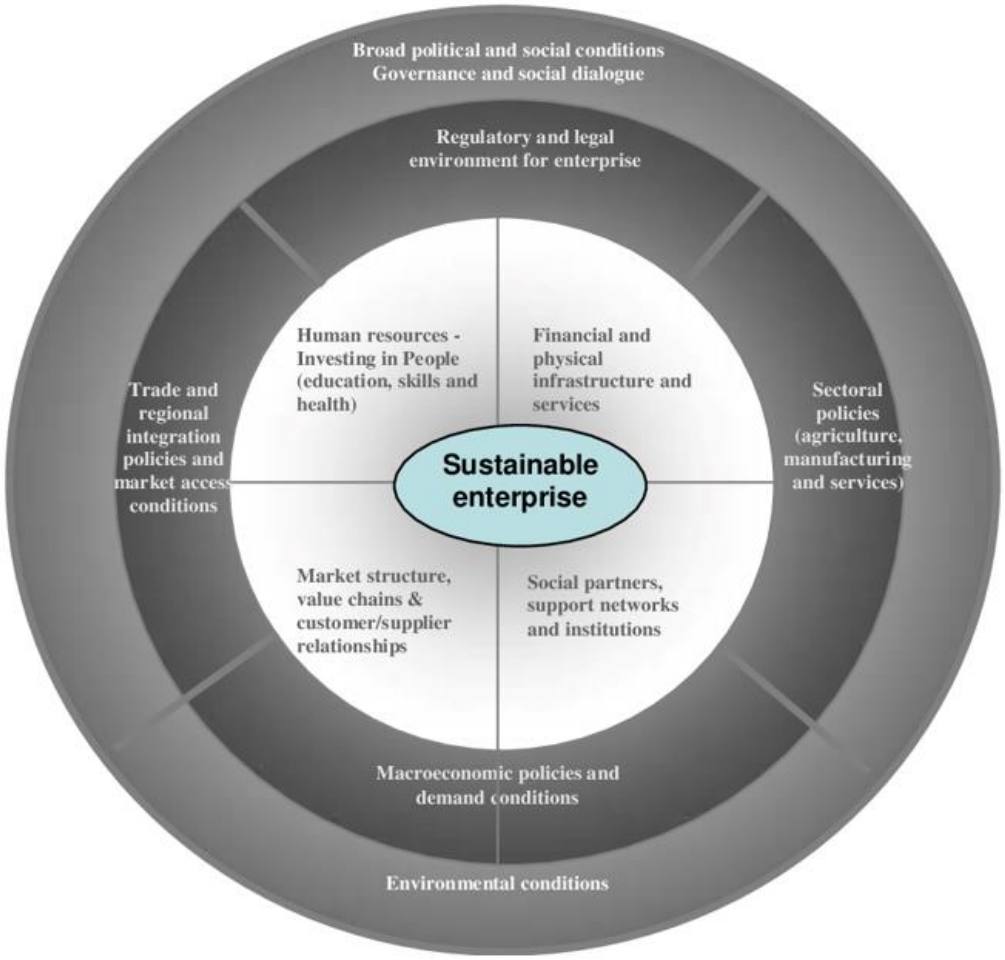
> The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. (para. 1)

As all United Nations organizations, the ILO aims to highlight and emphasize the importance of sustainable goals through their deliverables.

> The promotion of sustainable enterprises is a broad and wide-ranging subject, not least because enterprises take many forms, not just in terms of size, sector, and spatial dimensions but also in terms of how an enterprise is managed and governed and its legal status and operational objectives. All enterprises are part of society; they shape and are shaped by the communities in which they operate.
>
> Promoting sustainable enterprises is about strengthening the institutions and governance systems which nurture enterprises – strong and efficient markets need strong and effective institutions – and ensuring that human, financial and natural

resources are combined equitably and efficiently in order to bring about innovation and enhanced productivity. This calls for new forms of cooperation between government, business, and society to ensure that the quality of present and future life (and employment) is optimized whilst safeguarding the sustainability of the planet (International Labour Office, 2007, p.3).

Figure 15. *An Integrated Approach to Sustainable Enterprise Development*



Note: From The promotion of sustainable enterprises, by the International Labour Office, 2007, *International Labour Conference, 96th session*. International Labour Organization

2.3.2. Peace and Resilience

"The Decent Work Agenda is an essential element of the triple nexus and upholds ILO's belief that employment, decent working conditions and social dialogue can contribute to peace and resilience. Through its distinctive rights-based approach, the ILO aims to build the resilience of nations and people caught in fragile, conflict

and disaster situations. In collaboration with member States, tripartite constituents, international and national partners, and with the direct involvement of local populations and stakeholders, the ILO supports an employment-centered crisis response while promoting decent work and social justice as key drivers of resilience and social cohesion." (ILO, 2021, p.2). Figure 16 explains the ILO's framework of the jobs for peace and resilience.

Figure 16. *ILO's Jobs for Peace and Resilience Framework*

Note: From the *Jobs for Peace and Resilience: An ILO flagship programme key facts and figures* (p.3), by ILO, 2021 (https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_738531.pdf).

3. METHODOLOGICAL FRAMEWORK

3.1. Information Sources

Before jumping into the definition of the term *information sources*, the meaning of each word will be seen based on the dictionary. The Oxford Dictionary (2011a) defines *information* as "facts or details about someone or something" (Definition 1). This refers to the knowledge that is acquired during a person's life cycle. "Knowledge itself is power" (Bacon, 1597, as cited in Azamfirei, 2016, p. 1). In today's world, having the right information is important if someone wants to deal with everyday problems and obstacles that come in their way. Referring now to the word *source*, the Oxford Dictionary (2011) defines it as "a person or thing that causes or provides something" (Definition 3). If these two words are fused, it can be concluded that *information sources* are people, books, or documents that provide information.

Information sources are used for many purposes, such as supporting arguments when preparing school papers. Books, magazines, social media, newspapers, and websites can be all considered as *information sources*. However, some information sources are more reliable than others. Precaution needs to be taken carefully when doing research depending on the type of reasons. Sources are broken into two categories that are primary sources and secondary sources.

3.1.1. Primary Sources

According to The Oxford Advanced American Dictionary, primary sources are considered "a document that contains information obtained by research or by observation, not taken from other books" (Oxford Dictionary, 2011c, para. 1). Primary sources may include the following:

- Archives and manuscript materials
- Photographs
- Audio recordings
- Video recordings
- Films
- Journals
- Letters and diaries
- Speeches
- Scrapbooks
- Published books
- Newspapers and magazine clippings published at the time
- Government publications
- Oral stories
- Records of organizations
- Autobiographies and memoirs
- Printed ephemera
- Artifacts e.g.,
- Clothing, costumes, and furniture; and research data e.g.,
- Public opinion polls.

3.1.2. Secondary Sources

Solberg (2000) stated the following:

> A secondary source of information is one that was created later by someone who did not experience first-hand or participate in the events or conditions you're researching. For the purposes of a historical research project, secondary sources are generally scholarly books and articles. Also included would be reference sources like encyclopedias. (para. 1)

Here are examples of secondary sources:

- A scholarly journal article about the history of cardiology
- A current physics textbook
- A book about the psychological effects of WWI
- A biographical dictionary of women in science
- April 2007 newspaper or magazine article on anti-aging trends.

Chart 1. *Information Sources*

Objectives	**Primary Information Sources**	**Secondary Information Sources**
To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan	- Records of the organization - An oral interview with the project manager and coordinator	- Opinions pieces from reliable colleagues - The PMBOK® Guide
To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations	- Minutes meetings - Communication via telephone or emails	- Reliable websites - The PMBOK® Guide
To create a sustainable time management plan for assigning duration to work packages that can be tracked	- Face-to-face meetings with the project manager - Communication via telephone or emails	- The PMBOK® Guide
To create a sustainable cost management plan for assigning cost to work packages	- Communication via telephone or emails with project national coordinator	- Historical data from the company
To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion	- Personal interview with the project manager	- PMI database
To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour	- Organization's archives - Communication via telephone or emails with HR and project manager	- Reliable websites
To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority	- Emailed communication with the national coordinator - Organization's records	- Web information

Objectives	**Primary Information Sources**	**Secondary Information Sources**
To create a sustainable risk management plan that identifies risks and risk responses for risk directly related to the project and those that have sustainability implications	- Virtual meetings with the program unit colleagues from the organization - Organization's records	- Online research
To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services	- Communication via telephone or emails with Procurement key colleagues - Emails exchanged with the project manager	- The PMBOK® Guide database
To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project	- Face-to-face meetings with the project manager	- Historical data and information

3.2. Research Methods

The Oxford Dictionary (2011) defines the word *research* as "a careful study of a subject, especially in order to discover new facts or information about it" (Definition 1).

Conducting any type of research implies a *methodology* that is defined in the PMBOK Guide as "a system of practices, techniques, procedures, and rules used by those who work in a discipline" (PMI, 2017, p.2). In this context, research methods refer then to tools that are used to conduct the specific research.

3.2.1. Qualitative Research Method

Educba (2020) stated the following:

> Qualitative refers to the non- numerical elements in the research. When the information or data cannot be grasped in terms of numbers, qualitative research comes for the rescue. Though not reliable as much as quantitative, qualitative research helps to form a better summary in terms of theories in the data. (para. 7)

Qualitative research can point to interviews that help a person explain and better understand information that is being processed. The summary of research method is shown in Chart 2.

Chart 2. *Research Methods*

Objectives	Qualitative Research Method
To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan	To gather detailed and exact information, interviews would be conducted with project managers.
To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project	A focus group with the project team would be relevant to gather information about the key stakeholders involved in the project.
To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations	Interview sessions would be conducted with the key stakeholders of the project to gather their requirements and manage them with the project objectives
To create a sustainable time management plan for assigning duration to work packages that can be tracked	One-on-one conversations would be done with the National coordinator to gather the information regarding the activities defined for the project, the Gantt chart data.
To create a sustainable cost management plan for assigning cost to work packages	Interviews could also be done with the project manager to assemble data regarding the approved budget of the project.
To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion	Data through discussions and observations would be carried out to elaborate the quality components of the project.
To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour	This would be developed through one-on-one conversations with HR and project managers after submission of proper documentation.
To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority	Interview sessions with the project manager and key stakeholders would be conducted to develop the communication plan and other related communication components.
To create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications	Collecting existing data from the company would help to define the different risks that might jeopardize the project. In addition, interviews with experts and key stakeholders would be performed.
To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services	To perform this component, observations of procedures along with one-on-one conversations with the company procurement experts would be necessary.

3.3. Tools

In the PMBOK Guide, tools are described as "something tangible, such as a template or software program, used in performing an activity to produce a product or result" (PMI, 2017, p. 79). When the right tools are chosen, they help in planning, executing, and controlling the overall process of an activity or project. Here is the list of the different tools that will be considered and used in developing the objectives of the WR project:

- Project documentation
- Data gathering
- Expert judgement
- Meetings
- The Work Breakdown Structure (WBS)
- Brainstorming
- Data analysis
- Microsoft Project 2019
- Gantt chart
- The cost estimates
- Data representation
- Prompt lists
- Risk categorization
- Source selection analysis

Chart 3. *Tools*

Objectives	**Tools**
1. To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan	− Project documentation − Data gathering − Expert judgement − Meetings
2. To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations	− Expert judgement − The work breakdown structure − Brainstorming − Data analysis
3. To create a sustainable schedule management plan for assigning duration to work packages that can be tracked.	− Microsoft Project 2019 − Gantt chart
4. To create a sustainable cost management plan for assigning cost to work packages	− The cost estimates − Budget − Cost monitoring − Expert judgement − Microsoft Project 2019

Objectives	Tools
5. To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion	− Data representation − Meetings − Data analysis
6. To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour	− Expert judgement − Pre-assignment − The project management information system
7. To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority	− Communication technology − The project management information system − Meetings
8. To create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications	− Prompt lists − Risk categorization − Meetings − The project management information system − Expert judgement
9. To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services	− Expert judgement − Bidder conferences − Source selection analysis
10. To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project	− Expert judgement − Data representation − Meetings

3.4. Assumptions and Constraints

According to PMI (2016), “an assumption is any project factor that is considered to be true, real, or certain without empirical proof or demonstration” (p.1). In all project planning, managers and the team must make assumptions that could affect the project delivery. It is impossible to not make assumptions during this process. It is important to place barriers in case assumptions are proven to be false so that it barely affects the project itself.

The PMI describes project constraints as “the general restrictions that limit the project portfolio management in a particular domain” (PMI, 2016, p.2).

Chart 4. *Assumptions and Constraints*

Objectives	**Assumptions**	**Constraints**
1. To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan	The project charter will be developed to clearly define the work to be completed.	The time allowed to develop the project charter and submit it is not sufficient.
2. To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations	The scope management plan will identify and define all of the actions that are required to develop the project's requirements.	Changes may occur in the scope along the way that could impact the other processes.
3. To create a sustainable time management plan for assigning duration to work packages that can be tracked	The time management plan will be created on the allocated timeline.	The required information to create the time management plan is not fully accessible.
4. To create a sustainable cost management plan for assigning cost to work packages	The project's budget will be developed and will be kept on track with the right tools.	The inflation rate issue can lead to cost increase and create a stressful situation in the budget management.
5. To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion	Quality policies and procedures will be developed to ensure high level customer satisfaction and the project deliverables.	The quality management plan might not be approved by the customers that require further changes.
6. To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour	With the human resource management plan established, the right staff with the right skills are hired to lead the project activities successfully.	The lack of resources may affect the project delivery and put it behind schedule.
7. To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority	Transparency is to be created throughout the project in all aspects.	Communication at the top level may be inconsistent, which creates a lack of motivation among the team.
8. To create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications	All potential risks that could jeopardize the project delivery are apparent.	Hidden risks that could impact the project cost and schedule may arise.

Objectives	**Assumptions**	**Constraints**
9. To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services	All of the procurements needed for the project and requirements are clearly listed.	Not dealing with the right suppliers may lead to the supply of low-quality products.
10. To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project	The time invested in the right stakeholders will increase the value of the project even after its completion.	Stakeholders may not be sufficiently involved in all of the project phases.

3.5. Deliverables

The PMBOK® Guide defines a deliverable as: "Any unique and verifiable product, result, or capability to perform a service that must be produced to complete a process, phase or project." (PMI, 2017, p.95). Examples of deliverables could be stated as the following: a document, software, concept presentation, etc.

Deliverables are typically tangible components to meet the project objectives, and they can include components of the project management plan (PMI, 2017, p.101).

Chart 5. *Deliverables*

Objectives	**Deliverables**
To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan	▪ Elaborating the project charter
To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project	▪ Identifying stakeholders ▪ Planning stakeholders' engagement ▪ Managing stakeholders' engagement ▪ Monitoring stakeholders' engagement
To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations	▪ Planning scope management ▪ Collecting requirements ▪ Defining scope ▪ Creating WBS ▪ Validating scope ▪ Controlling scope
To create a sustainable time management plan for assigning duration to work packages that can be tracked	▪ Project schedule approach ▪ Defining activities ▪ Sequence activities ▪ Estimating the activities' duration ▪ Developing the schedule ▪ Controlling the schedule
To create a sustainable cost management plan for assigning cost to work packages	▪ Planning cost management ▪ Estimating costs ▪ Determining budget ▪ Controlling costs
To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion	▪ Planning quality management ▪ Managing quality ▪ Controlling quality

Objectives	Deliverables
To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour	▪ Planning resource management ▪ Estimating activity resource ▪ Acquiring resource ▪ Developing team ▪ Managing team ▪ Controlling resource
To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority	▪ Planning communication management ▪ Managing communications ▪ Monitoring communications
To create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications	▪ Planning risk management ▪ Identifying risks ▪ Implementing risks response ▪ Controlling risks
To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services	▪ Planning procurement management ▪ Conducting procurement ▪ Controlling procurement

4. RESULTS

4.1. Project Integration Management Plan

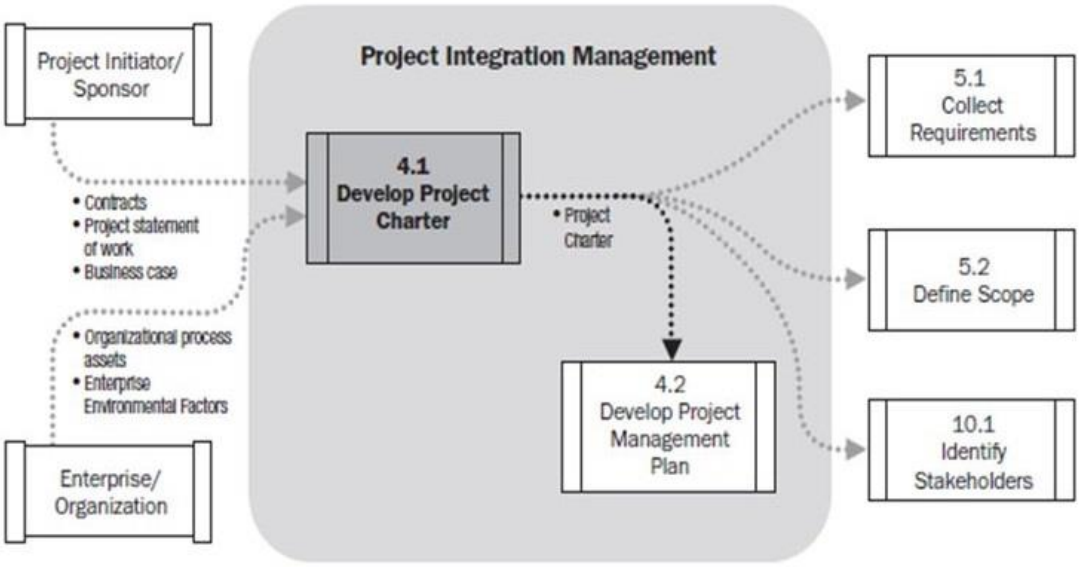
Stated as specific objective 1, the *project charter* is the initial document to initiate a project, and it displays an idea of what is intended to do in the first place. The project charter of the waste recovery project was firstly elaborated to start writing and setting up a strong and comprehensive project management plan–document. Once ready, it would reinforce the project impact and influence on the society and create sustainable outcomes for future generations to come, specifically in the area of Drouillard. To gather the information, analytical methods and interviews were applied as effectively as possible to make sure the information collected was accurate and up to date. Interviews were conducted directly with the project manager who was openly and gladly willing to collaborate. Besides these actions, the PMBOK Guide was consulted as an irrefutable source. The project charter acted like a

roadmap providing some type of direction to the project, and it was an effective communication tool that was installed between the stakeholders and the project team. A project charter was then the first process of the project integration management.

The project charter aimed to provide the stakeholders with a clear vision of the project objectives, scope, and the different responsibilities. With this document on hand, key stakeholders (direct stakeholders) had the ability to either approve or reject the project or to simply propose changes to improve the overall picture of the venture so it could perfectly meet their expectations. The creation of employment was one of the key outcomes that would have tremendous impact on the economy of the country. The project charter indicated not only the general and specific objectives but also the project purpose, the milestones of the elaboration, and the execution of the different activities of the waste recovery management plan.

The diagram of data flow illustrated in Figure 17 below shows a clear view of what goes on when developing a project charter. The left side indicates the input side of the project charter, and the right side describes the outputs. Based on the PMBOK Guide, that is the procedure to follow for developing this document accordingly (PMI, 2017, p. 76).

Figure 17. *Project Integration Management Diagram*



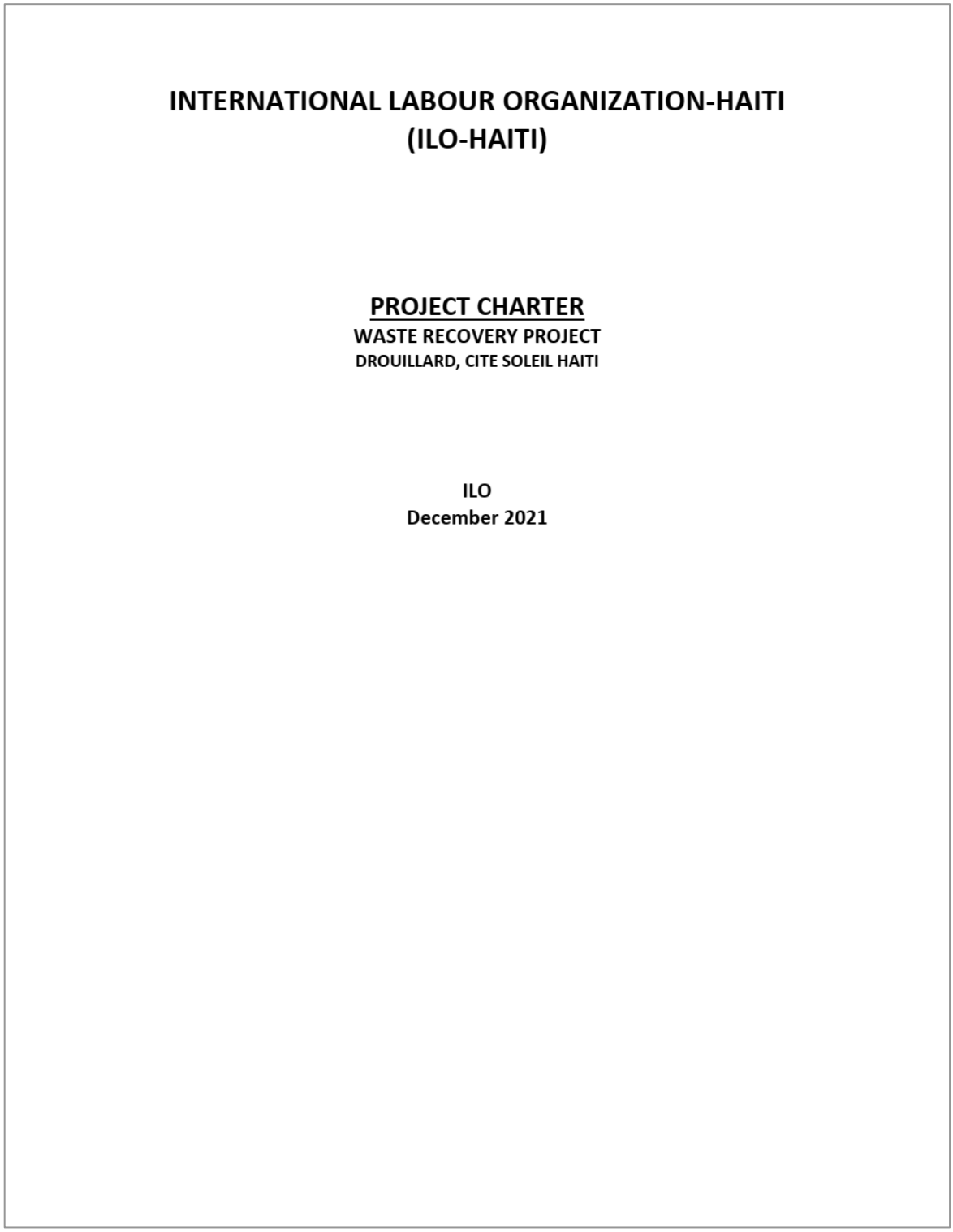
Note. From the *PMBOK Guide*, (p. 76), by the PMI, 2017. Copyright 2017 by Project Management Institute, Inc.

The project had a national coordinator in charge with the responsibility of collecting information and preparing the project charter. That national coordinator was also in constant communication with the key stakeholders involved in the realization and implementation of the venture. The waste recovery project was lacking processes to complete the finalization of the document. However, stakeholders and the whole team held several face-to-face and virtual meetings to find solid arguments so that the project could be approved and meet the needs that were in stake. With that in mind, the project manager in lead along with the program unit of the company discussed and applied the requirements of the stakeholders and finally developed the essential document to move forward, which was the project charter. The approval was done and granted with great satisfaction knowing that the end results of

this project would bring sustainable changes to not only the residents of the sites but also to the overall national system.

This project was the first of its kind to be planned within the ILO Haiti organization. It was particularly difficult to identify clear inputs regarding the method that could be used to reach the residents. The best approach was to gather expert judgement from previous companies that had undertaken similar projects in areas over the country.

Figure 18. *Approved Project Charter for the Waste Recovery Project*



INTERNATIONAL LABOUR ORGANIZATION-HAITI
(ILO-HAITI)

PROJECT CHARTER
WASTE RECOVERY PROJECT
DROUILLARD, CITE SOLEIL HAITI

ILO
December 2021

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Basic information

a. Title of project:	Waste Recovery project
b. Period:	14 months
c. Start:	06 May 2022
d. End:	31 July 2023

Justification and Description:

The phase of Port-au-Prince rainwater drainage works located in the commune of Cité Soleil to the west of National Road No. 1 has not yet been executed. Thus, the main collectors that drain the town of Delmas, such as the Canal du Parc Industriel or the Canal St Georges, spread over the national territory to emerge in earthen ditches insufficiently calibrated to contain runoff and their sediment loads and of waste.

One of these ditches, the Flamingo Drain, collects rainwater from the Industrial Park and its immediate surroundings. He crossed Route Soleil 9 via a culvert in poor condition and full of rubbish. At this level, the ditch flows are increased by part of the spreading from the masonry canal along the E-power road. Indeed, the water carried by the E-power canal spreads on Route 9 due to the filling and the smallness of the crossing structure. The combination of these different spreading operations, the heavy load of sediments and floating waste in the water and the low gradients between the ditches and the riparian land leads to the systematic flooding of the inhabited islets at each rainy episode, accompanied by loss of property and followed by deposit of waste in living spaces. Also, residents of the Flamingo Canal live in very precarious sanitary conditions.

To improve the living environment of these inhabitants and reduce their exposure to diseases related to these unhealthy waters, it is urgent to restore the size of the Flamingo Canal and ensure its outlet at the outlet without flooding the riverside dwellings.

Objectives of the project:

The project consists of the cleaning of the canal and the recovery of waste.

General objective:

The project aims to reduce the poverty of the population of the Drouillard Project area by creating sustainable and decent job opportunities.

Specific objectives:

- The high-risk level of the district and its vulnerability to flooding is reduced and the living environment of the populations of Project Drouillard and its immediate surroundings is improved.
- 250 jobs for young people are created to allow monetary circulation in the area to alleviate the situation of misery prevailing there. Green and sustainable jobs are created by setting up income-generating activities in waste management to create green and sustainable jobs.
- The employability of 400 young people is strengthened through skills development, respecting gender equality by granting employment opportunities for at least 50% of women/girls.

Expected results:

- The Drouillard Project area is cleaned and maintained
- Waste recovery structures are built, the creation of mini craft and processing centers and creation of a space for the selection and processing of materials (sand, gravel)
- Practice of urban agriculture developed
- Cases of illnesses linked to insalubrity are significantly reduced

Deliverables of the project

- Mechanical and labor-intensive cleaning of the outlet of the Flamingo Canal.
- Plastic and polystyrene collection center
- Reprofiling of the Flamingo Canal
- Waste management
- Training for Young people

Requirements

Given that the waste accumulated in the municipality of Cité Soleil is generated by the municipalities of Pétion-Ville, Delmas and Tabarre, a synergy will be created between these municipalities and a memorandum of understanding will be signed between the various town halls for a better waste management and disease prevention related to unsanitary environment.

Project organization

a. Project staff:

- Chief Technical Advisor (CTA)
- Administrative assistant
- Engineer
- Community mobilization specialist
- Drivers.

b. Project execution

- Mechanical cleaning of the canal
- Manual curing
- Management of site materials and equipment
- Training and waste recovery
- Intermunicipal waste management
- Awareness and recycling products
- Marketing of recycled products
- Spoil removal
- Monitoring & evaluation

c. Stakeholders

- Mayor of the City
- Ministry of Labour Minister
- CEO of Drouillard community
- Engineer
- Trade Unions
- CEO of SAKALA
- CEO of ELECTRA SEWING
- Project team
- CEO of JF Supplies & Services

Budget

The overall cost of the project, as provided in the table below, is estimated **at Seven Hundred Ninety Thousand and 00/100 of US Dollars** (USD 790,000.00)

Training, manpower and green job creation strategies for youth alone account for 58.9% of the total cost of activities. The project therefore satisfies the HIMO criteria and the objective of creating decent jobs.

Project Milestones

Milestone	Date
Project initiation kick-off	May 06, 2022
Planning meetings	May 09, 2022
Execution	May 16, 2022
Visit and inspection of sites with partners	May 16, 2022
Contracts preparation for cleaning companies	May 30, 2022
Cleaning of the outlet of the Flamingo Canal	June 13, 2022
Collection of plastic and polystyrene	August 22, 2022
Reprofiling of the Flamingo Canal	September 26, 2022
Debriefing meetings with partners	October 3rd, 2022
Waste management process	October 5, 2022
Training of 250 young people in crafting	April 3rd, 2023
Receipt of training reports	May 22, 2023
Monitoring and evaluation	July 21, 2023
End of project	July 31, 2023

Project considerations

Project assumptions

- Additional human resources will be available from the business to support the project
- Costs of raw materials will not change during the project execution
- The project will be completed in the timeframe set
- The budget planned of $790,000.00 will be sufficient for the different project deliverables

Project Constraints

- Lack of involvement of partners and government entities
- Lack of motivation of the workers that would be working on the sites
- The financial budget allocated is fixed and does not allow for over-spending
- Raining days will delay the cleaning of the Flamingo canal process

Project Risks

Managerial

- Lack of involvement of partners and government entities
- Lack of motivation of the workers that would be working on the sites
- The financial budget allocated is fixed and does not allow for over-spending
- Raining days will delay the cleaning of the Flamingo canal process

Financial

- Price increases on materials over time
- Underestimation of the project

Social

- Accidents on site
- Damage to materials on site

Environmental

- Flooding in case of heavy rains
- Important impact on health (severe illness)
- Severe climate changes causing delays

External

- Planning regulatory demands
- Stakeholder's miscommunication
- Scheduling delays
- Delivery of materials delays

Approved by: _____ Signature: _____

Date: _____

4.2. Project Stakeholder Management Plan

Achieving the project's goals and objectives in a successful manner mostly means that the stakeholders' requirements are fully met. Stakeholders play a major role on the impact that a venture should have on the society. They make sure that the outcome of a venture has a positive and sustainable impact on humanity. That is mostly why they accept to invest where the results will have a long-term impact even after the project is completed.

The project charter, in Figure 18, lists the different stakeholders that were involved in the realization of the waste recovery project. The stakeholders were primarily identified in Chart 6 and were ranked based on the impact level that each presented on the project. The stakeholder matrix was then prepared (See Chart 7 for reference).

4.2.1. Identification of Stakeholders

Here is the list of the stakeholders that were involved in the execution of the waste recovery project. They were classified in groups and subgroups.

Chart 6. *Identification of the Stakeholders of the Waste Recovery Project*

Nº	**Stakeholders**	**Stakeholder Subgroup**	**Details**	**Main Expectations**
1	National authorities	Government entities	Minister of the Labour Ministry	To attract tourism into the country portfolio to increase the economy
2	Traditional authorities		President of the Drouillard community	To make the residents' voice heard by the national authorities To expect clean and sanitary areas for Drouillard's population
3	Opinion leaders	Commissioner	Unions	To ensure the gender equality is applied For human rights and the well-being to be protected
4	Local authorities	Head of the Municipal Counsel	Mayor	To have a decent area that will improve the well-being of the Drouillard residents
5	Private sector	Training and construction institutions	SAKALA, Electra Sewing, and JF	To train the most individuals as possible

			Supplies & Services	To ensure the work done complies with the local building standards
6	Independent	Executioners	Project manager & team	To lead the project to the targeted goals To assure the project processes are met and applied
7		Consultant	Engineer	To ensure that the canal is built according to the technical requirements of the society on that matter

Chart 7. *Stakeholder Matrix for the Waste Recovery Project*

Nº	**Stakeholder Name**	**Title**	**Impact (Low-Medium-High)**	**Interest (Low-Medium-High)**	**Power (Low-Medium-High)**	**Influence (Low-Medium-High)**
1	Mr. Schneider HENRY	Minister of the Labour Ministry	High	High	High	High
2	Mr. Pierre JOSEPH	President of the Drouillard community		High	Low	Medium
3	Mr. Fabio GERMAIN	Project manager	High	High	High	High
4	Mr. Georges SAMUEL	Engineer	Medium	Medium	Low	Low
5	Mrs. Mariana OLIBRIN	Trade union representative	High	High	High	High
6	Mr. Getro POMPE	CEO of SAKALA	High	Medium	Low	Low
7	Mr. Bernard CAMP	CEO of ELECTRA SEWING	High	Medium	Low	Low
8	Mrs. Claudia DIMANCHE	Mayor of Drouillard	High	High	High	High
9	Mr. Charlotin RAMEAU	CEO of JF Supplies & Services	Low	Low	Low	Low

4.2.2. Project Stakeholder Engagement Management Plan

To engage a successful collaboration with the stakeholders, the clever way to do so was to categorize and prioritize them. Doing this greatly helped the stakeholders to align with the important decision imposed to be taken. This action was taken and applied by the project manager with the national coordinator. Communication between the project team and the stakeholders was listed on priority daily tasks.

4.2.2.1. Prioritizing Stakeholders

Following the listed information above, it was fundamental to arrange the stakeholders in order of importance – ranking them from the highest to lowest number. The tool and technique that was used to sort this out was the decision-making based on the prioritization of the stakeholders. Chart 7 clearly describes the L-Shape matrix tool.

Chart 8. *Prioritization of Stakeholders*

Stakeholder Prioritization	**Minister of the Labour**	**President of the Drouillard**	**Project manager**	**Engineer**	**Trade Union representative**	**CEO of SAKALA**	**CEO of ELECTRA SEWING**	**Mayor of Drouillard**	**CEO of JF Supplies & Services**	**TOTAL**	**Relative decimal value**
Minister of the Labour Ministry		10	5	10	5	10	10	10	10	70	0.26
President of the Drouillard community	1/10		1	1/5	1/10	1/5	1/5	1/10	1/5	2.1	0.01
Project manager	1/5	1		10	1/5	5	5	1	10	32.4	0.12
Engineer	1/10	5	1/10		1/10	5	5	1/10	10	25.4	0.09
Trade Union representative	1/5	10	5	10		10	10	10	10	65.2	0.24
CEO of SAKALA	1/10	5	1/5	1/5	1/10		1	1/10	1	7.7	0.03
CEO of ELECTRA SEWING	1/10	5	1/5	1/5	1/10	1		1/10	1	7.7	0.03
Mayor of Drouillard	1/10	10	1	10	1/10	10	10		10	51.2	0.19
CEO of JF Supplies & Services	1/10	5	1/10	1/10	1/10	1	1	1/10		7.5	0.03
									GRAND TOTAL	**269.2**	

The labour minister stakeholder was rated as highest priority with the highest score of 70. Thus, it revealed to be the most important stakeholder.

4.2.2.2. List of Stakeholder Requirements

- Application of the Decent Work Protection Program (DWPP) objectives
- Gender equality
- Productivity and cost effectiveness
- Long-term outcome
- Growth of the country economy
- Drouillard's population health data

Besides the prioritization of the stakeholders, their requirements were prioritized as well to minimize risks during the implementation and execution, so the high-risk requirements were implemented first.

4.2.2.3. Prioritizing Requirements

Besides prioritizing the stakeholders, it was pertinent to prioritize the requirements that were gathered from them as well. The L-Shape matrix was also used to determine this information. This was done by comparing each requirement with each stakeholder. Charts 9 to17 exemplify these steps.

Chart 9. *Requirement Prioritization for the Minister of the Labour Ministry*

Requirement prioritization for the Minister of the Labour Ministry	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		5	5	1/10	1/10	1/10	10.3	0.11
Gender Equality	1/5		5	1	1/10	1/5	6.5	0.07
Productivity and Cost Effectiveness	1/5	1/5		1/5	1/5	1/10	0.9	0.01
Long-Term Outcome	10	1	5		1	1	18	0.20
Growth of the Country Economy	10	10	5	1		1	27	0.30
Drouillard's Population Health	10	5	10	1	1		27	0.30
						GRAND TOTAL	89.7	

Chart 10. *Requirement Prioritization for the President of the Drouillard City*

Requirement prioritization for the President of Drouillard's Community	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1/10	1	1/10	1/10	1/10	1.4	0.01
Gender Equality	10		10	1	1/5	1/10	21.3	0.20
Productivity and Cost Effectiveness	1	1/10		1/10	1/10	1/10	1.4	0.01
Long-Term Outcome	10	1	10		1	1	23	0.22
Growth of the Country Economy	10	5	10	1		1	27	0.25
Drouillard's Population Health	10	10	10	1	1		32	0.30
						GRAND TOTAL	106.1	

Chart 11. *Requirement Prioritization for the Project Manager*

Requirement Prioritization for the Project Manager	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1	1	1	1	1/5	4.2	0.07
Gender Equality	1		1	1/5	5	1/5	7.4	0.12
Productivity and Cost Effectiveness	1	1		1/5	5	1/5	7.4	0.12
Long-Term Outcome	1	5	5		5	1/5	16.2	0.26
Growth of the Country Economy	1	1/5	1/5	1/5		1/5	1.8	0.03
Drouillard's Population Health	5	5	5	5	5		25	0.40
						GRAND TOTAL	62	

Chart 12. *Requirement Prioritization for the Engineer*

Requirement Prioritization for the Engineer	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1	1	1/5	1/5	1/10	2.5	0.03
Gender Equality	1		1	1	1/5	1/10	3.3	0.04
Productivity and Cost Effectiveness	1	1		1/5	1/5	1/10	2.5	0.03
Long-Term Outcome	5	1	5		1	1/10	12.1	0.15
Growth of the Country Economy	5	5	5	1		1/5	16.2	0.20
Drouillard's Population Health	10	10	10	10	5		45	0.55
						GRAND TOTAL	81.6	

Chart 13. *Requirement Prioritization for the Trade Union Representative*

Requirement prioritization for the Trade Union Representative	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1	10	1	1	1/10	13.1	0.17
Gender Equality	1		10	1	1	1/5	13.2	0.17
Productivity and Cost Effectiveness	1/10	1/10		1/5	1/5	1/10	0.7	0.01
Long-Term Outcome	1	1	5		1	1/5	8.2	0.10
Growth of the Country Economy	1	1	5	1		1/5	8.2	0.10
Drouillard's Population Health	10	5	10	5	5		35	0.45
						GRAND TOTAL	78.4	

Chart 14. *Requirement Prioritization for the CEO of SAKALA*

Requirement Prioritization for the CEO of SAKALA	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1/5	1	1	1/5	1/10	2.5	0.03
Gender Equality	5		5	1/5	1/10	1/10	10.4	0.11
Productivity and Cost Effectiveness	1	1/5		1/5	1/5	1/5	1.8	0.02
Long-Term Outcome	1	5	5		1/5	1/10	11.3	0.12
Growth of the Country Economy	5	10	5	5		1/5	25.2	0.28
Drouillard's Population Health	10	10	5	10	5		40	0.44
						GRAND TOTAL	91.2	

Chart 15. *Requirement Prioritization for the CEO of ELECTRA SEWING*

Requirement prioritization for the CEO of ELECTRA SEWING	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1/5	1	1	1/5	1/10	2.5	0.03
Gender Equality	5		5	1/5	1/10	1/10	10.4	0.11
Productivity and Cost Effectiveness	1	1/5		1/5	1/5	1/5	1.8	0.02
Long-Term Outcome	1	5	5		1/5	1/10	11.3	0.12
Growth of the Country Economy	5	10	5	5		1/5	25.2	0.28
Drouillard's Population Health	10	10	5	10	5		40	0.44
						GRAND TOTAL	91.2	

Chart 16. *Requirement Prioritization for the Mayor of Drouillard*

Requirement Prioritization for the Mayor of Drouillard	Application of the Decent Work Protection (DWPP) Objectives	Gender Equality	Productivity and Cost Effectiveness	Long-Term Outcome	Growth of the Country Economy	Drouillard's Population Health	TOTAL	Relative Decimal Value
Application of the Decent Work Protection (DWPP) Objectives		1/10	1	1/10	1/10	1/10	1.4	0.01
Gender Equality	10		5	1/5	1/10	1/5	15.5	0.15
Productivity and Cost Effectiveness	1	1/5		1/10	1/10	1/10	1.5	0.01
Long-Term Outcome	10	5	10		1	1	27	0.26
Growth of the Country Economy	10	10	10	1		1	32	0.31
Drouillard's Population Health	10	5	10	1	1		27	0.26
						GRAND TOTAL	104.4	

Chart 17. *Requirement prioritization for the CEO of JF Supplies and Services*

Requirement prioritization for the CEO of JF Supplies & Services	**Application of the Decent Work Protection (DWPP) Objectives**	**Gender Equality**	**Productivity and Cost Effectiveness**	**Long-Term Outcome**	**Growth of the Country Economy**	**Drouillard's Population Health**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives		1	1	1	1/5	1/5	3.4	0.04
Gender Equality	1		1	1/5	1/5	1/10	2.5	0.03
Productivity and Cost Effectiveness	1	1		1/10	1/10	1/10	2.3	0.03
Long-Term Outcome	1	5	10		1	1/5	17.2	0.21
Growth of the Country Economy	5	5	10	1		2	23	0.28
Drouillard's Population Health	5	10	10	5	5		35	0.42
						GRAND TOTAL	83.4	

4.2.2.4. Weighted Requirement Prioritization

Chart 18. *Customer Weighted Requirement Prioritization*

Customer Weighted Requirement Prioritization	**Minister of the Labour Ministry**	**President of the Drouillard Community**	**Project Manager**	**Engineer**	**Trade Union Representative**	**CEO of SAKALA**	**CEO of ELECTRA SEWING**	**Mayor of Drouillard**	**CEO of JF Supplies & Services**	**TOTAL**	**Relative Decimal Value**
Application of the Decent Work Protection (DWPP) Objectives	0.03	0.00	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.09	0.09
Gender Equality	0.02	0.00	0.01	0.00	0.04	0.00	0.00	0.03	0.00	0.12	0.12
Productivity and Cost Effectiveness	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
Long-Term Outcome	0.05	0.00	0.03	0.01	0.02	0.00	0.00	0.05	0.01	0.019	0.019
Growth of the Country Economy	0.06	0.00	0.00	0.02	0.02	0.01	0.01	0.06	0.01	0.21	0.21
Drouillard’s Population Heath	0.06	0.00	0.05	0.05	0.11	0.01	0.01	0.05	0.01	0.37	0.38
									GRAND TOTAL	1.00	

4.3. Project Scope Management Plan

To improve the living environment of the Drouillard residents and reduce their exposure to diseases related to these unhealthy waters, the ILO waste recovery project found the urge to restore the size of the Flamingo Canal and ensure its release at the outlet without flooding the riverside dwellings. With that being said, this emphasizes the importance of this whole operation by revealing the scope of the project.

4.3.1. Waste Recovery Project Scope

This part mostly describes the goals of the project, its activities, and deadlines exactly. A description of the waste recovery project is below:

Initial Scope

- Chosen Site
    - The project will be undertaken in the Drouillard Cite Soleil, where the need of creating sustainable and salubrity outcomes is required.

- Description of the Project
    - As part of the project, 19 300 cubic meters of rubbish will be cleaned out; 15 640 cubic meters of waste will be evacuated, and 1 670 linear meters of banks will be developed. This work will be carried out by a private service provider.
    - An artisanal waste recovery and processing center will be implemented.
    - A training of 250 young people on recycling and transforming waste into works of art will be conducted, and it will also be carried out by a private service provider.

- Proposed Duration, Date, and Budget
    - Start Date: May 06, 2022
    - Duration of the Project: May 2022 – July 2023
    - Budget: $790 000.00

4.3.2. Scope Management Approach

4.3.2.1. Planning of the Scope

During that stage, the project team gathered all of the inputs from all of the project stakeholders through several meetings.

4.3.2.2. Collecting Stakeholder Requirements

To ensure and to have a clear idea that the customers/stakeholders got what they wanted by meeting the project objectives, the scope of the project was defined, developed, monitored, controlled, and validated through the document called scope management plan, which is one of the components of project management. To develop the scope management of the waste recovery project, project teams attended several meetings with selected stakeholders and partners who provided specific project requirements. Once this information was collected and analyzed, what needed to be done to meet the stakeholders' expectations throughout the project phases was clear. The scope management plan, the document described earlier, was prepared based on those project requirements. Teams made sure via additional meetings that the requirements indicated by the stakeholders were final and mentioned on the scope plan. Failure to do so could have affected not only the scope baseline but also the following knowledge areas.

Speaking of stakeholder requirements, during that stage, a requirement plan was elaborated describing how those requirements were managed and analyzed in the project. The national coordinator of the waste recovery project was responsible for capturing the stakeholders' requirements and addressing them in the plan by conducting surveys and using questionnaires.

4.3.2.3. Defining the Scope

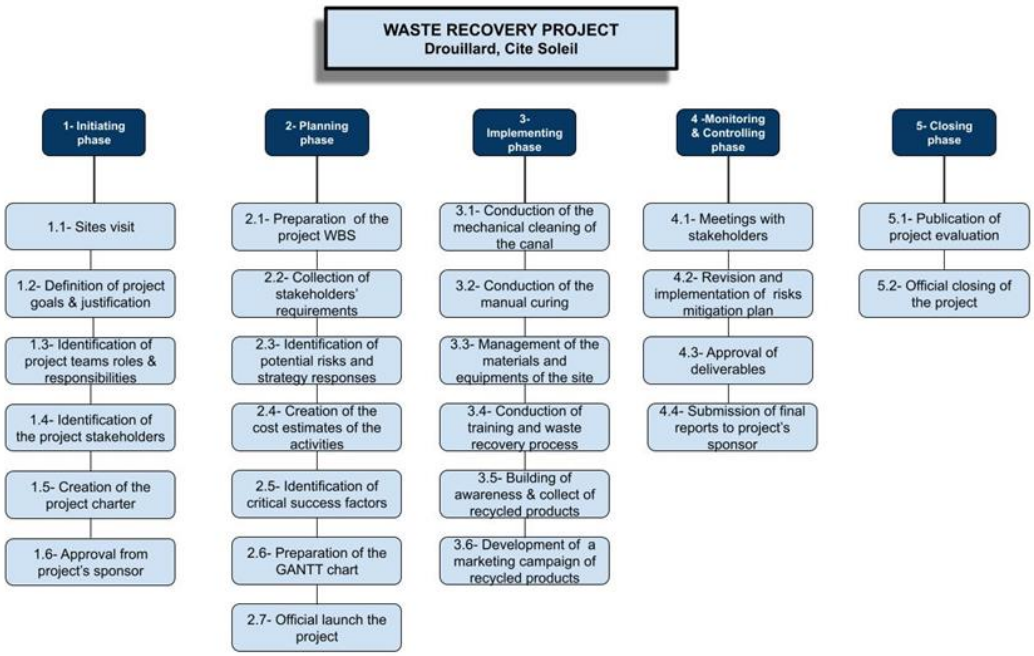
Once the team figured out the final deliverables that were expected out of the project, the scope was defined via the document scope statement that acts like a map. It was done through alternative analysis, a technique that was used by the team to evaluate the different routes that could be taken to achieve the goals.

4.3.2.4. Creating the Work Breakdown Structure and WBS Dictionary

As part of all of the activities that were planned and approved in the project, the work breakdown structure was designed to decompose all of those activities in detail. This was done by the team with the goals of accomplishing the project objectives, maintaining the work organized, and keeping track of them throughout the project stages. Besides this, the project teams also designed the WBS dictionary (See template in Appendix B.) to support the work breakdown structure itself, providing more detailed information related to the deliverables and the schedule for each component of the WBS shown in Figure 19 below. As you can see, the waste recovery (WR) project is broken down into five phases through which the overall planned activities should be completed:

- The initiating phase is where the project goals and description are defined by the project manager. In this stage, based on the type of activities, the team's roles and responsibilities are clearly set, the stakeholders' requirements are collected, and the project charter is prepared and shared with the key stakeholders to finally obtain the approval for launching the venture.
- In the planning phase, the activities are defined and broken down through the WBS shown in Figure 19. The team sits to identify the main risks that could affect the project from beginning to end with selected stakeholders. The risk response strategy is also documented. The activity schedule is reflected through the Gantt chart, which is the responsibility of the national coordinator. That is when the project is ready to start.
- The implementation phase marks where the project activities are put into action as planned. During every step of the way, the project manager is managing each activity and ensuring that they meet the project objectives.
- The monitoring & controlling phase is conducted by the project teams along with the stakeholders to oversee if the processes ensure that the approved project is within the schedule, budget, and scope. If any risks are identified, that is the stage where the staff revises the risk mitigation plan.
- Once project sponsor sends all of the comments on the final reports, the evaluation of the project is done.

Figure 19. *Work Breakdown Structure of the Waste Recovery Project*



4.3.2.5. Validating the Scope

Altogether, the manager, the team, and the stakeholders inspect the deliverables with their success criteria as the project goes. When approved, the deliverables are considered complete. If any change request occurs, the project manager goes over them, makes the necessary changes, and makes sure they are well documented before communicating them to the technical team. This is conducted during the project closure.

4.3.2.6. Controlling the Scope

Through data analysis, the team analyzes what was done from the beginning to the end to ensure that the deliverables were executed according to the scope management plan. With the help of performance reports along with the requirements, the project manager analyzes the data to detect any problems, if any, and to keep the project on track.

Chart 19. *Roles and Responsibilities (Source: Compiled by author)*

Name	**Role**	**Responsibilities**
Ministry of Social Affairs and Labor (MAST) and the National Institute of Vocational Training (INFP)	It is the body guaranteeing work and regulating decent work.	Playing the role of interface between the ILO and the beneficiary community of the project He will be responsible for selecting groups of workers; supervising training sessions; and establishing, with the INFP, the characteristics of the training modules in concert with the companies/enterprises in charge of training to promote decent, socially responsible, and environmentally sustainable work.
International Labour Organization	Project manager and teams	Being responsible for carrying out, in consultation with the strategic institutional partners and the town hall of Cité-Soleil in particular, the coordination, including the administrative management and the logistical aspects of the project
Government entities	Mayors	Being responsible for giving legal authorization for the start of activities
SAKALA	Partner	Being responsible for the program for the revalorization of waste destined for commercialization and the creation of more job opportunities
ELECTRA SEWING	Partner	Supporting the employability of young people in SONAPI's entrepreneurial ecosystem
	Local implementation committee	Easing the beneficiary selection process

4.4. Project Schedule Management Plan

The project schedule was developed based on the approved work breakdown structure (WBS) of the waste recovery project designed during the scope management plan. This section is crucial because it provided a clear picture of the waste recovery project's progress during a given point in time to the team and the stakeholders.

The waste recovery project has a duration of 14 months with a list of activities that were well-defined and pre-approved by the teams and stakeholders. With the project schedule prepared, it was known for when the activities were due and what type of resources and personnel were needed.

To assure this is done based on the initial plan, software and templates were used to particularly monitor the timeline and the activities' progress along the way.

4.4.1. Project Schedule Approach

This section explains the five (5) schedule management processes in which the waste recovery project will be carried out. As an input in this schedule management process, the project charter clearly indicated the milestones with start and end dates for the deliverables planned and approved with the overall team. The schedule plan was developed in two months due to the nature of the work to be done.

4.4.2. Defining Activities

List of activities of the WR project:

1. Visiting the sites
2. Defining the project goals and justification
3. Identifying the project roles and responsibilities
4. Creating the project charter
5. Obtaining the approval from the project sponsors
6. Preparing the project WBS
7. Collecting the stakeholders' requirements
8. Identifying potential risks and strategy responses
9. Creating the cost estimate of the activities
10. Identifying critical success factors
11. Preparing the Gantt chart
12. Kicking off the project
13. Conducting a mechanical cleaning of the canal
14. Conducting the manual curing
15. Managing the materials of the site
16. Conducting the training and waste recovery process
17. Developing a marketing campaign of recycled products
18. Attending meetings with stakeholders
19. Revising and implementing the risk mitigation plan
20. Approving the deliverable
21. Submitting the final report to the project sponsors
22. Closing the project

To initiate this step, the project team started with the scope baseline. The approved WBS information was used to help the project manager with his team to do this step through several meetings. They decomposed the work packages from the waste recovery project into

schedule activities. The project manager and project national coordinator identified task estimations linked with each task. The milestone list mentioned in the project charter was then elaborated. Chart 20 clearly illustrates the milestone list of the waste recovery venture.

Chart 20. *Milestones of the Waste Recovery Project*

Milestone	**Date©**
Project initiation kick-off	May 06, 2022
Visit of the site	May 06, 2022
Meetings with partners	May 11, 2022
Execution	May 16, 2022
Visit and inspection of sites with partners	May 16, 2022
Contract preparation for the cleaning companies	May 30, 2022
Cleaning the outlet of the Flamingo Canal	June 20, 2022
Collection of plastic and polystyrene	October 3, 2022
Reprofiling the Flamingo Canal	October 20, 2022
Debriefing meetings with partners	December 15, 2022
Managing the materials and equipment of the site	December 17, 2022
Developing a marketing campaign of recycled products	February 14, 2023
Training 250 young people in crafting	February17, 2023
Receiving the training reports	April 30, 2023
Monitoring and evaluation	May 2, 2023
Meetings with stakeholders	May 2, 2023
Revising and implementing the risk mitigation plan	May 3, 2023
Approval of the deliverables	June 2, 2023
Submission of the final reports to the project sponsor	June 5, 2023
Publication of the project evaluation	July 31, 2023
Official closure of the project	July 31, 2023

4.4.3. Sequence Activities

Now that the activities had been identified, it was time to find the relationships, in order words, the dependencies, existing among those activities. This was done using the activity and milestone lists. This was important to have a more realistic project schedule by knowing which activity needed to be completed first or after. The critical path, shown in Appendix D, was prepared by the national coordinator of the project using MS Project.

4.4.4. Estimating the Activities' Duration

How much time would the different tasks take to be completed? To answer this question, the project manager, with his assistant, used expert judgement and parametric estimating as tools. From previous surveys that were conducted by some entities for similar activities, they gathered valuable information that could provide a clear and understanding idea of the time that would be needed for each planned activity with the estimated resources. Within a few weeks, the duration estimates were ready, and as a result, the project document was updated. Along with this, the network diagram was also designed and shown in Figure 20 to track the progress of the activities during the course of the project. Chart 21 displays the PERT method that uses the three-point estimating technique to refer to the duration of each activity shown as optimistic duration, most likely duration, and pessimistic duration.

The PERT chart was used to estimate the minimum amount of time that would be needed to close a project. This was done by examining the breakdown of the project and estimating the duration of each activity, the dependencies between them, and the order in which they must be completed. To find the expected duration, the following formula was used:

$$Expected\ duration\ =\ mean\ = \frac{(T_a+4T_m+T_b)}{6} \quad (1)$$

Where:

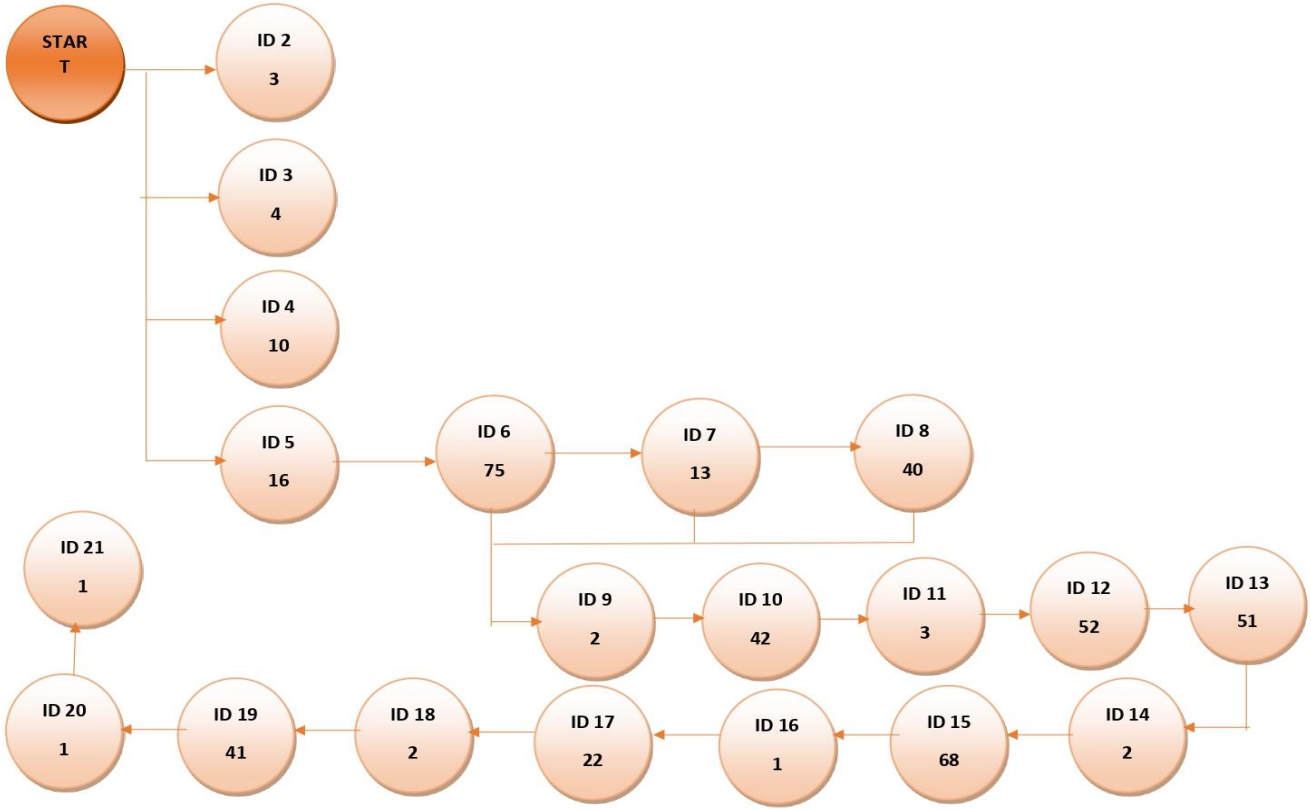
T_a stands for the most optimistic duration
T_m stands for most probably
T_b stands for the most pessimistic duration

The expected duration of the waste recovery project is 454 days (Chart 21).

Chart 21. *PERT Technique for the Duration Estimate of the WR Project*

ID	Activity description	Predecessor	Optimistic Duration (T_a)	Most likely Duration (T_m)	Pessimistic Duration (T_b)	Mean
1	Kick-off	N/A	0	0	0	0
2	Visit of the sites	1	1	3	5	3
3	Meeting with partners	1	2	4	7	4
4	Visit and inspection of the sites with partners	1	6	10	15	10
5	Contract preparation for the companies	1	10	16	22	16
6	Cleaning the outlet of the Flamingo Canal	5	67	75	85	75
7	Collecting plastic and polystyrene	6	9	13	22	14
8	Reprofiling the Flamingo Canal	7	35	40	50	41
9	Debriefing meeting with partners	6,7,8	1	2	5	2
10	Managing the materials and equipping the sites	9	35	42	55	43
11	Developing a marketing campaign for the recycled products	10	1	3	5	3
12	Training sessions	11	45	52	64	53
13	Training 250 young people in crafting	12	44	51	63	52
14	Receiving training reports	13	1	2	5	2
15	Monitoring and evaluation	14	50	68	75	66
16	Meeting with stakeholders	15	1	1	3	1
17	Revising and implementing the risk mitigation plan	16	20	22	25	22
18	Approval of the deliverables	17	1	2	4	2
19	Submission of the final report to the project sponsors	18	33	41	50	41
20	Publication of the project evaluation	19	1	1	3	1
21	Closing the project	20	1	1	3	1
					TOTAL	**454**

Figure 20. *Network Diagram of the Waste Recovery Project*



4.4.5. Developing the Schedule

This section implied the development of the overall project schedule along with all the activities. The WBS, milestones, and the activity list were used as inputs. The Gantt chart in Figure 20 was designed to help keep track of the tasks of the project. This chart illustrated not only the schedule of the project but also the dependencies among the activities.

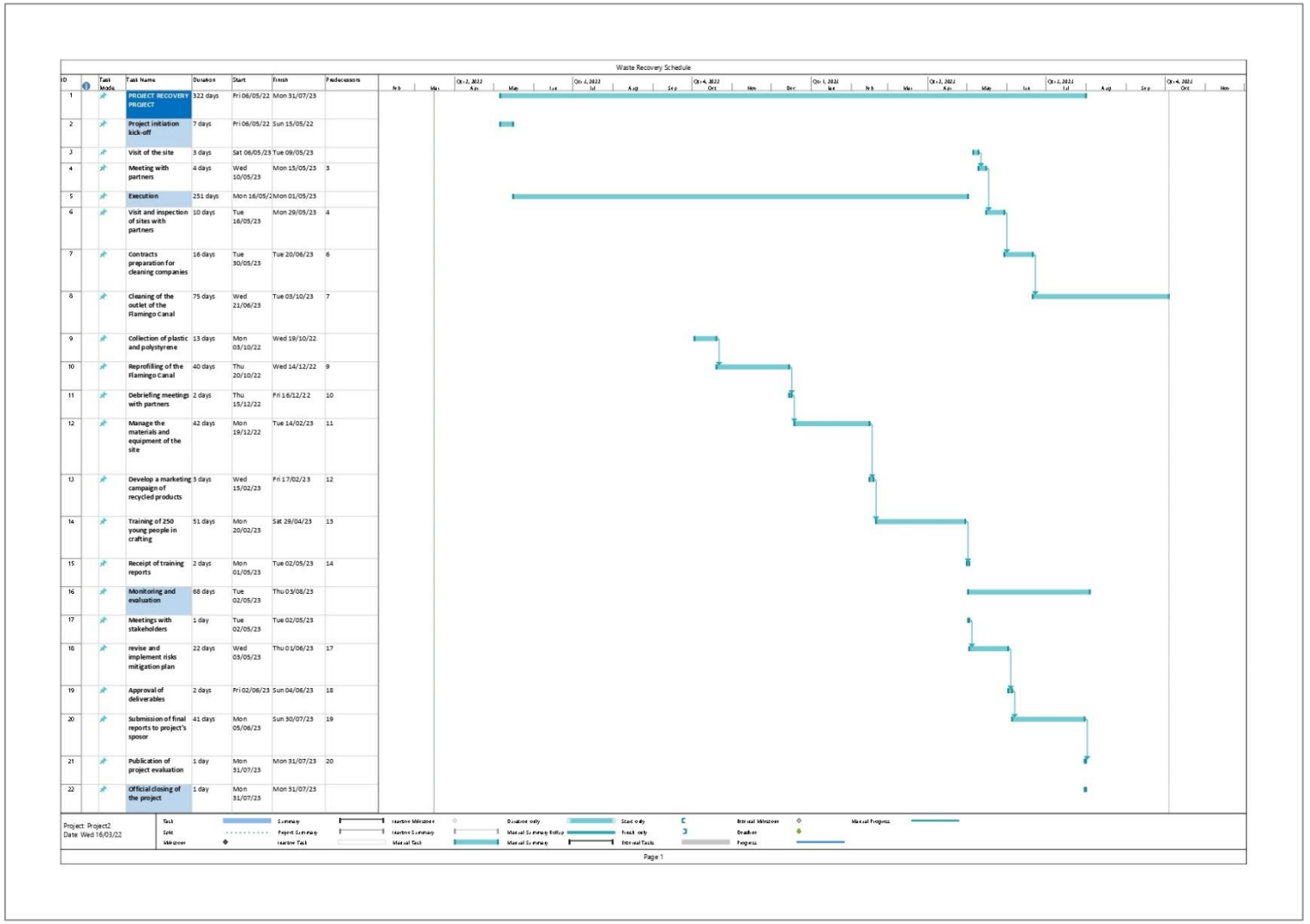
Given the type of the project, the Gantt chart was right for this project, which was the first of its own within the ILO, particularly in the area in which the project was taking place. This overview, at a glance, had a great benefit for the stakeholders of the project. With that in mind, once the Gantt chart was all done, it was shared with the project sponsors.

The Gantt chart that is shown in Figure 21, was prepared by the national coordinator using the MS Project software.

4.4.6. Controlling the Schedule

Once the schedule was in place and the activities were being conducted as planned, it was crucial to monitor these activities on the Drouillard site to make sure the team kept track of the timeline. They compared the project activities with the schedule baseline to know if the project was ahead or behind schedule.

Figure 21. *Gantt Chart of the Waste Recovery Project*



ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		PROJECT RECOVERY PROJECT	322 days	Fri 06/05/22	Mon 31/07/23	
2		Project initiation kick-off	7 days	Fri 06/05/22	Sun 15/05/22	
3		Visit of the site	3 days	Sat 06/05/23	Tue 09/05/23	
4		Meeting with partners	4 days	Wed 10/05/23	Mon 15/05/23	3
5		Execution	251 days	Mon 16/05/2	Mon 01/05/23	
6		Visit and inspection of sites with partners	10 days	Tue 16/05/23	Mon 29/05/23	4
7		Contracts preparation for cleaning companies	16 days	Tue 30/05/23	Tue 20/06/23	6
8		Cleaning of the outlet of the Flamingo Canal	75 days	Wed 21/06/23	Tue 03/10/23	7
9		Collection of plastic and polystyrene	13 days	Mon 03/10/22	Wed 19/10/22	
10		Reprofiling of the Flamingo Canal	40 days	Thu 20/10/22	Wed 14/12/22	9
11		Debriefing meetings with partners	2 days	Thu 15/12/22	Fri 16/12/22	10
12		Manage the materials and equipment of the site	42 days	Mon 19/12/22	Tue 14/02/23	11
13		Develop a marketing campaign of recycled products	3 days	Wed 15/02/23	Fri 17/02/23	12
14		Training of 250 young people in crafting	51 days	Mon 20/02/23	Sat 29/04/23	13
15		Receipt of training reports	2 days	Mon 01/05/23	Tue 02/05/23	14
16		Monitoring and evaluation	68 days	Tue 02/05/23	Thu 03/08/23	
17		Meetings with stakeholders	1 day	Tue 02/05/23	Tue 02/05/23	
18		revise and implement risks mitigation plan	22 days	Wed 03/05/23	Thu 01/06/23	17
19		Approval of deliverables	2 days	Fri 02/06/23	Sun 04/06/23	18
20		Submission of final reports to project's sposor	41 days	Mon 05/06/23	Sun 30/07/23	19
21		Publication of project evaluation	1 day	Mon 31/07/23	Mon 31/07/23	20
22		Official closing of the project	1 day	Mon 31/07/23	Mon 31/07/23	

4.5. Project Cost Management Plan

One of the causes of a project failure is the bad management of the budget. Having an efficient cost planning helped the manager to be organized and to be on track during the activities by seeing if the project was under budget. To elaborate the cost management, the team underwent these four (4) processes:

- Planning the cost management
- Estimating costs
- Determining the budget
- Controlling costs

To plan the cost management of the waste recovery project, the first element that was used was the project charter that already indicated the pre-approved financial information allocated to deliver the venture (USD 790,000.00). Along with this, the schedule management was used to inform on the timeline for each activity. In order to establish the activity cost, expert judgement was applied to gather existing documents from similar projects that were successfully conducted with sustainable outcomes.

Once planned, the team created a cost estimation aligned with the activity list of the project. Given the type of the project, which was one of its kind within the organization, the expert judgement method was applied to gather the information. All of the resources that were needed were taken into consideration to prepare the preliminary estimate along with other types of costs in terms of contingency. Figure 22 perfectly illustrates the estimate that was drafted by the team prior to the budget approval.

Furthermore, right after they completed the cost estimation, the team sat together along with the project manager to set up the actual budget of the project by getting into more details. The expert judgement tools were also used to come up with the numbers.

Finally, as all processes require, it was vital to assess the overall performance related to the cost matters to track the changes of the cost baseline.

Each of these processes will be further developed by providing more details on how each of them was undertaken.

4.5.1. Estimating Costs

Figure 22. *Estimate Budget of the Waste Recovery Project*

ESTIMATE

Project name: Waste Recovery — Website: www.ilo.org

Project ID: 107931

ESTIMATE BUDGET

ID	TASKS	QTY	UNIT PRICE	TOTAL PRICE
1	Visit of sites	1		$0.00
2	Meeting with partners	1		$0.00
3	Visit and inspection of sites with partners	1	$15,000.00	$15,000.00
4	Contract preparation for companies	1		$0.00
	Hiring for reprofiling of the Canal	1	$100,000.00	$100,000.00
	Hiring for cleaning of the Canal	1	$60,000.00	$60,000.00
	Hiring for collection of plastic and polystyrene	1	$45,000.00	$45,000.00
5	Cleaning of the outlet of the Flamingo Canal	1	$15,000.00	$15,000.00
6	Collection of plastic and polystyrene	1	$15,000.00	$15,000.00
7	Reprofiling of the Flamingo Canal	1	$35,000.00	$35,000.00
8	Debriefing meetings with partners	1		$0.00
9	Manage the materials and equip of the sites	1		$0.00
	Logistics activities	1	$90,000.00	$90,000.00
	Remuneration of workers	35	$2,000.00	$70,000.00
10	Develop a marketing campaign for recycled products	1		$0.00
	Visibility campaign sessions	3	$5,000.00	$15,000.00
	Printing of banners	4	$550.00	$2,200.00
	Broadcase on newspapers	1	$150.00	$150.00
11	Training sessions	1		$0.00
12	Training of 250 young people in crafting	10	$15,000.00	$150,000.00
	Training materials	1	$5,000.00	$5,000.00
	Gender equality	1	$45,000.00	$45,000.00
13	Receipt of training reports	1		$0.00
14	Monitoring and evaluation	1	$20,000.00	$20,000.00
15	Meeting with stakeholders	1		$0.00
16	Revise and implement risk mitigation plan	1	$10,000.00	$10,000.00
17	Approval of deliverables	1		$0.00
18	Submission of final report to project's sponsors	1		$0.00
19	Publication of project evaluation	1		$0.00
	Subtotal			$692,350.00
	Contingency costs (10%)			$69,235.00
	Cost baseline			$761,585.00
	Management reserve (3.7%)			$28,415.00
	TOTAL			$790,000.00

Based on one of the ILO's visions that implies the gender equality, the gender aspect was well taken into account during the planning discussion. It is believed that gender-specific indicators were meant to be explicit in the project budget. The demand of women participation in training sessions was quite high and strongly encouraged. Resources were allocated to apply strategies into the conduction of those trainings (representing 5% of the initial project budget).

The estimating method that was mostly used was analogous estimating. The parametric technique was applied for the printing of the banner section.

During the elaboration of the project charter, the team had identified the budgetary aspect as a constraint. It was planned that further funds would be allocated should the resources become insufficient as the project progressed. Changes would occur not only in the scope baseline but also in the cost baseline if additional activities emerged and were required by the sponsors and stakeholders.

In addition to that, the project manager added the reserve cost to the estimates to counter unforeseen elements:

1. The management reserve was applied to the total cost estimates to counter other potential unidentified risks outside the cost baseline that could jeopardize the progress of the approved activities
2. The contingency reserve was also considered to help manage the risks identified within the cost baseline during the planning processes. With that being said, unknown and unexpected elements would probably be considered as additional

expenses and be included into the reserve section that became part of the project budget.

Additional information regarding the implementation and execution of the project was prone to be added into the estimates as long as potential suggestions and further relevant information was required to ensure a smooth venture process from planning to delivery.

It was discussed that the supplies would be either purchased by the organization or handed to the charge of the consultants. After consultation with the regional office, the ILO was instructed to oversee the acquisition of the supplies required for each activity in terms of training supplies, cleaning supplies, and the logistic activities' fees.

4.5.2. Determining the Budget

As it was said earlier, the expert inputs from the key stakeholders were applied as a tool to determine the budget that would be needed overtime, just to have a concrete cost baseline and to maintain the project scope. Suggestions about the reserve analysis that should be taken into account were also brought to the discussion table. The percentage of the risk of contingency was determined at 10% of the cost of the project ($692,350x10%=$69,235), which is allocated for the identified risks that will further be discussed in Chapter 4.9. Expert judgement and parametric were used to identify the percentage allocated for the contingency reserve. However, the management reserve was able to be found against the cost baseline representing 3.7%. Chart 22 illustrates the cost breakdown of the total project budget.

Chart 22. *Breakdown of the Total Project Budget (Source: Compiled by author)*

Total cost estimates	$692,350
Contingency reserve (10%)	$69,235
Cost baseline	$761,585
Management reserve (3.7%)	$28,415
Total project budget	**$790,000**

The budget was determined by combining the costs of each activity represented in the third level of the WBS. Once the budget was approved by the team and stakeholders involved, the cost baseline was then developed. The project manager, with the responsibility of publishing it to everyone, used the cost baseline document as a comparison set for the actual progress of the project to counter every change that could arise ahead of time and remediate it as fast as possible.

4.5.3. Controlling Costs

The importance of controlling costs is based on the level of performance of the project. To do so, information from the cost baseline was used as an input to be compared with the actual progress of the project. That was where changes and updates were processed throughout the venture.

To undertake this process, it was important to know if the reserve funds allocated during the elaboration of the project budget needed adjustments. This analysis was done by the project manager and the national coordinator. As part of the reserve costs, additional risks were identified, and additional reserves were then added to the project budget.

This change request was brought up by the manager to the stakeholders and resulted in an adjustment of the cost and schedule baselines. Updates to the project documents had been completed by the team, affecting the estimates, cost baseline, and risk register.

4.6. Project Quality Management Plan

Apart from all of the management processes that have been seen previously, quality management is one of the most vital ones for a project, as it helps establishing standards that once applied and achieved, would make the stakeholders happy and satisfied of the outcome.

As a first project of its kind within the ILO, it was strongly encouraged to establish high quality standards to outrate the performance level towards its sponsors and stakeholders. The quality management plan undergoes three (3) processes:

- Planning quality management
- Quality assurance
- Controlling quality

4.6.1. Planning Quality Management

In order to identify, establish, and then effectively implement accurate quality guidelines into the project, the process was done during the planning phase with the cost and schedule information. The project manager and national coordinator defined and documented all project specific quality standards for both the product and processes. The information was well documented and became part of the waste recovery project management plan.

To perform the activities (the reprofiling of the Flamingo canal, the collection of garbage to be transformed, and the conduction of training sessions), quality metrics were identified to

control and measure the performance of the quality process implementation during the activities. They were used as a measure to determine if the project was heading to the direction with the necessary element of success. As an example of these quality metrics, the percentage of tasks completed on time, the number of defects detected on a daily basis, and the customer satisfaction scores were all taken into account to measure the quality performance of the waste recovery project.

Any adjustments that occurred in the quality plan definitely affected the cost and schedule plan. Each project team made sure to oversee the quality requirements to ensure that the product development progress was on track. Meetings were held if defective elements were detected in order to mitigate them as soon as possible. The national coordinator, with the team, conducted assessments throughout the project life cycle to make sure that all of the processes were being implemented.

Specific tasks were assigned to team members to ensure the quality objectives were met as planned. Chart 23 outlines the roles and responsibilities of each person.

Chart 23. *Roles and Responsibilities for the Quality Plan*

Name	Roles and Responsibilities
Project manager	• To oversee the quality process implementation • To supervise the national coordinator and inspection the teams who perform the assessment • To appoint a person to also supervise the project quality
National coordinator	• To manage the project quality • To ensure that quality requirements are applied, and the objectives are met
Project assistant	• To update the project documents whenever an adjustment occurs
Engineer	• To implement all quality requirements and measures into the reprofiling of the canal activities • To inspect that all materials are appropriate.
Project sponsor	• To manage the project quality

Along with the development of the cost management plan, the cost of quality (COQ) was also planned and integrated by the project manager. With that being said, the monitoring and evaluation segment is partially dedicated to assessing the level of quality work that would be performed throughout the project. The cost of conformance was taken into consideration by the team to avoid the poor quality of work and products that could result in internal and external failures.

4.6.2. Quality Assurance

Everyone involved in the execution of the waste recovery project had a role to play for the quality assurance section. A checklist, illustrated in Chart 24, was available to track all the progress and check if all of the requirements had been met. It also provided information regarding the quality assurance activities planned within the project. The team had prepared that simple format to document all of the progress and steps done throughout the project in terms of managing the quality.

Chart 24. *Checklist for the Quality Assurance of the WR project*

No.	Checklist Review	Yes	No	Comments
1	**Procurement**			
	▪ Are all of the contractors hired through a bidding process?			
	▪ Are the bidding processes reviewed by the PM?			
	▪ Are the bidding processes documented and filed?			
	▪ Are the payment procedures being followed?			
	▪ Are the deliverables being submitted for each payment?			
2	**Site management**			
	▪ Are the materials being inspected on a weekly basis?			

No.	Checklist Review	Yes	No	Comments
	▪ Are the materials stored in a safe facility?			
	▪ Are the reprofiling activities following the regulation measures?			
	▪ Do the teams on site wear their protected gears?			
	▪ Does the inspection of the site occur on a weekly basis?			
3	**Training sessions**			
	▪ Is an attendance sheet available on each session?			
	▪ Are training materials distributed to each participant?			
	▪ Are quizzes done at the end of each session to assess the participants' knowledge?			
	▪ Do the training reports contain statistical information?			
	▪ Are the final reports reviewed by the PM and NC of the project?			

4.6.3. Quality Control

To ensure the project's success, it is imperative to perform an evaluation of the quality processes and requirements to know if they are met. For that purpose, the project team used the quality metrics that were previously prepared to check how the processed control quality complied to them. A questionnaire was also prepared and sent out to all stakeholders to gather crucial data about the product.

See below the quality measurements list that were considered to evaluate the quality of the different processes involved in a project against the standards of the organization or on the requirements specified during the project planning:

Management measures

- Efficient use of project resources
- Construction processes related to the Flamingo Canal

Health measures

- Population and public heath
- Workers' safety on site

Outcome measures

- Government engagement and interest in Drouillard community
- Local community engagement in Drouillard well-being
- High visibility of project from medias
- Percentage of female trainees *VS* number of male trainees
- Number of jobs created after the project completion

Performance measures

- Average time spent on tasks by the team
- Number of complaints related to workers on site

The project deliverables were measured and compared with the quality standards that were established. Charts 25, 26 and 27 show the logs that served as documentation regarding the stakeholders' acceptance.

Chart 25. *Quality Assurance Log*

Trial #	Date	Process Measured	Required Value	Actual Measured	Acceptable	Recommendation	Date Resolved

Chart 26. *Quality Control Log*

Product #	Date	Item Measured	Required Value	Actual Measured	Acceptable	Recommendation	Date Resolved

Chart 27*.Quality metric log*

PROJECT QUALITY METRICS							
Project			**Project package**				
Project manager			**Project sponsor**				
Project artifacts			**Project updated**				
ID	DELIVERABLE NAME	DESCRIPTION	POTENTIAL QUALITY METRIC	PRIORITY	METRIC TARGET	STATUS	Comments

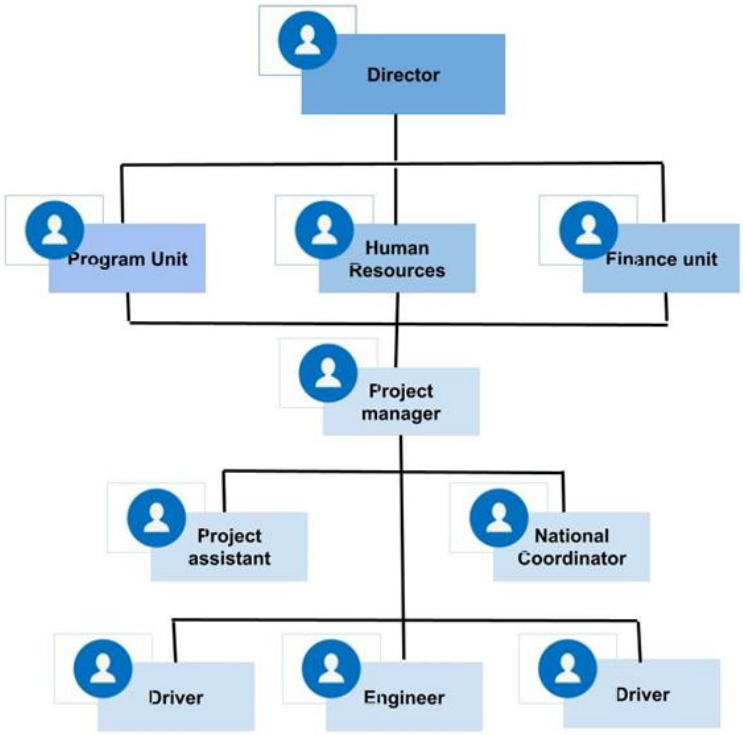
4.7. Project Resource Management Plan

Resources are vital for a project to succeed. Allocating resources is a step but allocating the right resources for a particular activity is another step that refers to an effective planning. The project manager made sure that the right resources were available to lead the project to the targeted objectives by meeting all of the stakeholders' expectations.

Through meetings, the manager, with his supervisors, discussed the necessary needs and availability that would be required for this specific project. However, additional needs would be acquired in an as-needed-basis throughout the project life cycle.

Among the tools that were used to plan the resources, an organizational structure was elaborated to show the positions and relationships. This also shows the information flows between the levels within the organization. The type that was utilized and applied to exemplify this structure was the hierarchical chart. As a small team, it was easy to figure this out and visibly understand the connection between all of the team members. Figure 23 completely explains this overall picture.

Figure 23. *Hierarchical Structure of the WR Project*



4.7.1. Plan Resource Management

4.7.1.1. Roles and Responsibilities

This information is crucial to the project success, as it outlines the tasks and responsibilities of each team member of the waste recovery project. In order to perform their responsibilities effectively, each team member needs to know and understand their role within the project. For this purpose, besides the hierarchical structure shown above in Figure 23, the roles and responsibilities have been also outlined:

Director (first level): He is responsible for providing the final approval for contracts and procurement paperwork. He also assists important meetings about the project execution.

Program unit (second level): This unit is responsible for allocating the necessary funds to the activities, overseeing the expenditures along with the initial budget that was planned. In addition, it is responsible for reviewing the terms of reference of all contracts and assisting in the preparation of these contracts.

Human resources (second level): They are responsible for hiring the right staff that will be assigned to the right position, assisting the team with their complaints, ensuring their well-being by answering all their queries, if they present any, and providing the necessary information in terms of social benefits and so on.

Project manager (third level): He is responsible for leading the project to its success target. He takes part in the hiring of the team and oversees all of the team. He ensures that the activities of the project are completed by everyone, and that communication is done properly among everyone including the team and the stakeholders. He will be the one to assess their performance anyway. He approves all planned and unexpected expenditures regarding the deliverables.

National coordinator (fourth level): He is responsible for overseeing all of the contractors and communicating constantly with the stakeholder. He is responsible for reporting every query and suggestion to the project manager. The national coordinator will be mostly working on the field with the contractors.

Project assistant (fourth level): He is responsible for preparing the administrative paperwork, getting the necessary approval for procurement processes, and attending all

meetings with the teams. The project assistant also communicates with the stakeholders upon request.

Engineer (fifth level): He is responsible for the reprofiling of the Flamingo Canal in terms of the quality of the work to be performed. He oversees the contractors and workers, evaluates the work, and recommends adjustments if they are needed.

Drivers (fifth level): They are responsible for the logistics on the field, for transporting the team and materials on the field.

4.7.2. Acquiring Resources

Prior to the project conception, the different positions and responsibilities were drafted into the project document as the internal resources. However, as external resources, the waste recovery project mostly subcontracted those that were in charge of managing those resources. The project manager had mainly targeted companies and negotiated with them. Some companies were referred from other institutions. Among the external resources, the following ones can be cited:

Electra Sewing: It is responsible for conducting professional trainings enabling young people to access a job and a stable source of income in the booming textile subcontracting sector.

Caribbean Craft: It is responsible for conducting trainings in the art of recycling and transforming waste into marketable ethical fashion and craft items.

JF Services and Supplies: It is responsible for the reprofiling of the Flamingo Canal.

SAKALA: As for non-decomposable waste, SAKALA is responsible for valorizing it by creating handicrafts, indoor/outdoor furniture, and works of art that will constitute a source of income.

4.7.3. Developing & Managing the Team

Although the waste recovery project is a small project, it is important to keep the objectives and the sustainable and positive outcome achieved after the completion of the project in mind. All of this would be achieved with the small team that has been seen earlier. To reach this, it is imperative to build trust, encourage communication, and increase the collaboration among everyone. Constant meetings were held to discuss issues that the team might face during the execution of their tasks.

Performance appraisal: The project manager conducted performance appraisal to evaluate the performance of the staff. The first part that was completed at the beginning allowed the staff to indicate and discuss the objectives to be met throughout the project life cycle with the manager. The second part is done at the end of the project completion, and it is aimed to measure the actual performance with the objectives that were priorly set. Once approved by the staff and the manager, the final review is then forwarded to the human resource manager.

4.8. Project Communication Management Plan

Communication is a vital element in a well-managed project that ensures that relevant and major information is displayed to everyone involved in the project through a reliable network. Elaborating a good communication plan for the waste recovery project highlighted, in various ways, some aspects of the project in terms of the communication tools and techniques that were utilized.

The project manager had the primary role in ensuring that the communication remained effective and clear with not only the team but also the main stakeholders of the project. Here is how the communication was established and displayed for the waste recovery project (Chart 27 outlines a communication plan for the audience of the project).

Chart 28. *Communication Plan for the Audience of the Project*

Communication	Method	Frequency	Goal	Owner
Contractors				
Contract signature	E-mail	Once the contract is ready	To seal a commitment for the activities to be done	The project manager and the national coordinator
Project updates	E-mail and phone calls	When necessary	To review the project updates and discuss issues and the next steps	The project manager and the national coordinator
Reports	E-mail	Contract schedule	To present the project deliverables and track the progress and issues	The contractors
Suppliers				
Procurement updates	E-mail and phone calls	When necessary	To ensure that the quality standards comply with the ILO requirements	The project assistant
Project manager				
Project updates	E-mail, phone calls, and informal meetings	Daily	To discuss the progress, changes, and unexpected issues	The national coordinator
Audit reports	E-mail	Bi-monthly	To present the compliance points and discrepancies observed in the project	The audit expert
Administrative documents	E-mail	When necessary	To approve and sign every expense for the project	The project assistant
Financial report	E-mail	Bi-weekly	To monitor the different expenditures that occurred for the project	The project assistant and the national coordinator
Project team				
Project changes	Meetings and E-mail	When necessary	To assure the team adjust their responsibilities based on the changes affecting the project scope	The project manager
Team meeting	Meeting	Weekly	To discuss the progress / issues of the project	The project manager and the project assistant
Team building	Face-to-Face	One time	To motivate the team	The project manager
National coordinator				
Financial report	E-mail	Bi-weekly	To monitor the different expenditures that occurred for the project	The program unit
Audit report	E-mail	Bi-monthly	To present the compliance points and discrepancies observed in the project	The audit expert

4.9. Project Risk Management Plan

Even though the main risks of the waste recovery project had been identified in the approved project charter illustrated in Figure 18, the risk management plan is the ultimate step to be elaborated for the project planning phase. It contains the risk assessment, analysis, and mitigations, along with the responses for each. The project itself presented several risks, given to the fact that it was the first project to undertake such activities in the least favorable and dangerous area of Haiti, which is Drouillard.

To prepare the risk management plan, the schedule management plan and the cost management plan were used as input to precisely identify the risks that the project would undergo. The project manager, along with the national coordinator, developed a tailored RBS to be shared with the overall team and stakeholders (See the RBS in Chart 28). This document was used by the project manager to monitor the risk management processes within the project. It was the responsibility of the project manager to ensure that the risk register was updated whenever it was necessary. The national coordinator was also delegated to update the risk register when it was necessary.

Once the risk breakdown structure (RBS) was in place, the risk register (shown in Chart 29) was next on the list to be drafted to perform the qualitative analysis. Once ready, the project manager made sure it was shared with all of the key stakeholders. The project assistant, with her outstanding job, ensured that this vital information was stored in a safe place and was ready to be used anytime the team would require the document. What makes it so important is that all of the detailed information regarding the risks that had been identified was recorded along with the analysis and plans for how those risks would be mitigated.

Each risk was perceived differently, and their impact on the project differed from one to another. Some risks were seen as threats and others as opportunities. It was the responsibility of the project manager to analyze these components with scrutiny. As a result, the probability and impact scale (Chart 30) and the probability and impact matrix (Chart 31) were also developed. To ensure that the project successfully reaches its goals and objectives, the risk impact assessment was mandatory to figure out the probabilities and consequences that the identified risks would have on the venture if they came to be realized.

Chart 29. *Risk Breakdown Structure (Source: Compiled by author)*

RBS Level 0	**RBS Level 1**	**RBS Level 2**
0- All Sources of The Waste Recovery Risks	1- Management Risks	1.1 Lack of involvement of the partners and government entities
		1.2 Lack of motivation of the workers that would be working on the sites
		1.3 Lack of motivation of the team
		1.4 Miscommunication on project information
	2- Financial Risks	2.1 The price increases on materials over time.
		2.2 Underestimation of the project
		2.3 The allocated financial budget is fixed and does not allow for over-spending.
	3- Environmental Risks	3.1 Flooding in case of heavy rains
		3.2 Important impact on health (severe illness)
		3.3 Severe climate changes causing delays
	4- Social Risks	4.1 Accidents on the site
		4.2 Damage to materials on site
	5- External Risks	5.1 Planning regulatory demands
		5.2 Scheduling delays
		5.3 Stakeholder miscommunication
		5.4 Delays in the delivery of materials

Chart 30. *Risk Register of the Waste Recovery Project*

RISK REGISTER													
Category	**RBS Code**	**Risk**	**Cause**	**Consequence**	**Probability**	**Impact**	**PxI**	**Trigger**	**Owner**	**Prevention Strategies**	**Risk Response**	**Target Date**	**Cost**
Management risks	1.1	Lack of involvement of the partners and government entities	Political instability in the country	The approvals might not be given on a timely manner.	0.1	0,9	0.09	Project cancellation	Project management team	Establishing and signing a MoU with the Govt	Accept	31-Oct	37K
	1.2	Lack of motivation of the workers that would be working on the sites	Hiring additional workers	Frustration leads to delays and cost overruns.	0,3	0.5	0.15	Project delay and cost overruns	Project management team	Reviewing and readjusting the workers' fees	Mitigate/ transfer	30-May	
	1.3	Lack of motivation of the team	High turnover	Cost overruns, schedule delays, and the loss of institutional memory	0.9	0.5	0.45	Unmanageable workload	Project manager	Designing an HR focal point to closely assist the team needs	Mitigate	30-Apr	
	1.4	Miscommunication of the project information	Too many assumptions	Cost overruns and schedule delays	0.5	0.9	0.45	Loss of vital information regarding the project	Project management team	Establishing baseline communication standards to reinforce the exchange of information among the team	Avoid	31-Apr	

Financial risks	2.1	The price increases on materials over time	Budget adjustments	Schedule delays	0.3	0.4	0.12	Project delay and cost overruns	Project management team	To trade time for discounts	Accept	31-Oct	10K
	2.2	Underestimation of the project	Budget adjustments	Schedule delays	0.4	0.5	0.20	Project delay and cost overruns	Project management team	Consultation of expert judgement from the same field	Avoid	30-May	
	2.3	The allocated financial budget is fixed and does not allow for over-spending.	Financial high-tech software	Refusal from project sponsors from more fundings	0.9	0.5	0.45	Project cancellation	Project management team	To manage the project budget carefully and plan accordingly	Avoid/ Mitigate	30-May	
Environmental risks	3.1	Flooding in case of heavy rains	Overtime work for workers	Cost overruns	0.7	0.6	0.42	More demands from workers	Contractors and the project management team	To have an agreement with the Drouillard mayor regarding the access to public trucks as an alternative	Accept	31-Jun	8K
	3.2	Important impact on the health of workers (severe illness)	Prompt admission to hospitals	Severe delays in the project	0.4	0.8	0.32	Delays	Project management team	To put medical surveillances in place on sites when they are urgently needed	Mitigate/ Transfer	30-Jul	
	3.3	Severe climate changes causing delays	Civil works	Flooding	0.2	0.4	0.08	Delays	Contractors and the project management team	Adaptation efforts to adjust the systems and the residents to withstand the impacts of climate change	Avoid/ Transfer	30-Sep	
Social risks	4.1	Accidents on site	Prompt admission to hospitals	Severe delays in the project	0.5	0.9	0.45	Delays	Contractors and the project management team	To provide reasonable care for people who may have been injured To secure the scene and take steps to ensure that further harm does not occur	Mitigate/ Transfer	On-going	
	4.2	Damage to the materials on site	Unexpected acquisition of additional materials	Budget increase and cost overruns	0.2	0.5	0.10	Cost overruns	Project management team	Litigation avoidance To improve the onsite material management	Mitigate	On-going	

External risks	5.1	Planning regulatory demands	Several important meetings with concerned entities	Halt of the project if it is prohibited	0.1	0.4	0.04	Loss of quality	Project management team	To create compliance policies and internal controls that include written clear policy statements	Accept	31-Oct	$12,235
	5.2	Scheduling delays	Hiring additional staff	Cost overruns	0.2	0.6	0.12	Cost overruns	Project management team	To plan correctly To track tasks' progress on a timely basis To set firm deadlines and keep them realistic To conduct frequent meetings	Avoid	On-going	
	5.3	Stakeholder miscommunication	Installing a new communication software within the team	Disagreement on important aspects of the project	0.3	0.5	0.15	Project shutdown	Project management team	To determine the stakeholders' motivation To listen to what they have to say To meet with them in person	Avoid	On-going	
	5.4	Delays in the delivery of materials	Additional trucks for the pick-up of materials	Increase of the budget and cost overruns	0.3	0.3	0.09	Project delays	Project management team	To minimize the daily ordering To pre-plan deliveries in accordance with the project schedule	Mitigate/ Transfer	30-May	2K

Chart 31. *Probability and Impact Scales for the Waste Recovery Project*

Scale	**Probability**	**Probability Score**	**+/- Impact on the Project Objectives**			
			Time	**Cost**	**Scope/Risk Category**	**Quality**
Very High	>70%	0.9	> 6 months	> 8%	Managerial and financial	Very significant impact on the overall functionality
High	50 – 70%	0.7	5 – 6 months	4% to <8%	Environmental	Significant impact on the overall functionality
Medium	30 – 50 %	0.5	2 – 5 months	2 to <4%	Social	Some impact in the key functional areas
Low	10 – 30%	0.3	1 – 2 months	1 to <2%	External	Minor impact on the overall functionality
Very Low	<10%	0.1	< 1 month	<1 %		Minor impact on the secondary functions

Chart 32. *Probability and Impact Matrix for the Waste Recovery Project*

			IMPACT				
			Very Significant	**Significant**	**Potentially Significant**	**Less than Significant**	**Negligible**
		Scores	**0.9**	**0.7**	**0.5**	**0.3**	**0.1**
PROBABILITY	**Very high**	**0.9**	0.81	0.63	0.45	0.27	0.09
	High	**0.7**	0.63	0.49	0.35	0.21	0.07
	Medium	**0.5**	0.45	0.35	0.25	0.15	0.05
	Low	**0.3**	0.27	0.21	0.15	0.09	0.03
	Very low	**0.1**	0.09	0.07	0.05	0.03	0.01

A 5X5 probability and impact matrix was settled to address how likely the risk events would occur on the objectives. It was prepared with these five (5) colors: dark red, brown, yellow, green, and gray. These colors represented the urgency of risk response planning and determined the reporting levels.

- Dark red (very high risk): All very high risks— score ≥ 0.8 —were of utmost importance and top priorities. Prevention and mitigation strategies for all these risks should be framed in advance to prevent their occurrence or mitigate their impacts as early as possible.
- Brown (high risk): Based on this matrix, the score of high risks is $0.45 \leq x < 0.8$. These risks were also quickly addressed, but they were not prioritized as highly as very high risks. The goal was to ensure that their impact was reduced to a level that was as minor as rationally realistic.
- Yellow (medium risk): Medium risks scored within the range $0.21 < x \leq 0.35$. These risks were excluded from the initial risk management strategies, but they became gradually significant as they arose. Therefore, these risks were taken seriously.
- Green (low risk) and gray (very low risk): Low risks scored within the range $0.03 < x \leq 0.21$. A very low risk— score ≤ 0.03 —could be ignored. Most risks in this category were almost meaningless, and in most cases, they could be safely ignored. No mediation was needed for those.

4.9.1. Controlling Risks

Tools and techniques were utilized to take on this activity. This process is vital for the project to pursue the route to the end line successfully. As it was said earlier, different tools and techniques were selected to execute this task.

- **-Meetings:** First, the project engaged meetings with the team and the stakeholders to facilitate the risk management process. During those meetings, the project assistant made sure that the agenda, with a stated clear purpose, was distributed to everyone; invited the key stakeholders and team members; used the appropriate tools and techniques; and finally sent out meeting minutes to all participants that contained the important decisions that were taken, the actions to execute, the different issues, and risks to be solved and mitigated.
- **Risk audit:** This was done by the project manager, to inspect whether the risk responses were defined in an effective manner and to determine if changes were required. Besides, the team also inspected the processes to identify, evaluate, respond to, and control risks.
- **Reserve analysis:** The contingency and management reserve were both calculated when doing the cost planning and were added to the project budget. Risks were monitored very carefully so that the reserves would not decrease.
- **Variance and trend analysis:** The variances between the cost and schedule baselines were elements that were closely managed. The team made sure to have the variances under control so that there were not potential increases; otherwise, that would have meant the existence of a risk.

4.10. Project Procurement Management Plan

To address this topic, it is important to know that procurement refers to the relationship between the company and the suppliers contracted to perform a particular service or deliver a product. The success of the project actually depends on how this relationship is maintained throughout the project life cycle. This also outlines how contracts, the supplier selection, will be managed.

With that being said, the waste recovery project required the acquisition of some labour materials and supplies to execute the activities planned for the Flamingo Canal. The company oversaw the direct acquisition of those materials. Contractors were involved in the selection of suppliers. These expensive materials required a close supervision during the acquisition.

4.10.1. Plan Procurement Management

The procurement management plan approach was processed with the collaboration of the team with the program unit of the company. Early in the process, the roles and responsibilities of each person were defined. Their roles and responsibilities are outlined in Chart 32 below:

Chart 33. *Roles and Responsibilities of the WR Team for the Procurement Management Plan*

Name	Role	Responsibilities
Fabio Germain	Project manager	• To be responsible for coordinating and negotiating with suppliers and contractors for low-cost and high-quality materials • To identify the supplier selection criteria • To approve the bid proposals
Alen Charles	National coordinator	• To ensure that the materials and products are in accordance with the company policies • To communicate tasks and updates to the contractors
Gaetane Garcon	Project assistant	• To maintain constant communication with the suppliers (quote request – change request – delivery arrangement) • To prepare the purchase order for the suppliers • To obtain the approval from the project manager

Name	Role	Responsibilities
		• To keep all procurement documentation in safe storage
Georges Samuel	Engineer	• To directly work with the contractors • To ensure that the deliverables comply with what was asked • To make a change request if it is necessary
Noor Saldanah	Project sponsor representative	• To approve additional costs if they are relevant • To provide insight on the project progress
Sandy Quiros	Program unit representative	• To ensure the compliance of the selection criteria with the ILO policies • To submit the correct budget lines for the specific contractors/suppliers' offers
Mariana Mendieta	Director	• To grant the final approval of contracts / purchase orders

4.10.2. Conducting Procurement

In terms of suppliers or vendors, a request for quote (RFQ) was sent to three of them (providing the same services) to solicit the cost from each one for a particular product or service. Once the quotes were collected, a comparative chart explaining the choice of selection was prepared by the project assistant and he had it approved and signed by the project manager. With the signed chart, the purchase order was prepared for the selected supplier. Finally, the PO was approved and signed by the director and sent out to the supplier for it to be signed.

When it came to the contractors, a request for proposal was sent out to potential contractors in the field targeted and linked to the project activities. Prior to this, the project manager, along with the national coordinator, drafted the terms of reference and submitted it to the program unit and director for approval. Once the offers were received from different individuals/companies, an evaluation was conducted with the three best offers. With the three pre-selected contractors/suppliers, the final selection was done based on the approved selection criteria. An example of the evaluation report is shown below in Chart 33.

Chart 34. *Template for the Evaluation Report for the Contractor Selection at the Waste Recovery Project*

EVALUATION CRITERIA		ENTREPRISE A	ENTREPRISE B	ENTREPRISE C
FINANCIAL OFFER				
PERCENTAGE	100%	Offer 1	Offer 2	Offer 3
Financial offer				
DECISION				
TECHNICAL OFFER				
Criteria				
Criteria 1	20			
Criteria 2	20			
Criteria 3	20			
TOTAL				
DECISION	60%			

4.10.3. Controlling Procurement

This section specially refers to the monitoring of the contract performance, to the change or corrections requested, and finally, to the contract closing. In the waste recovery project, the administrative activities included the following:

1. To closely monitor the submission date of the deliverables, to send a reminder two weeks before the actual date, and to follow-up with the contractors in case of any delays (The explanation of the eventual delays was well documented).
2. The project manager closely analyzed the submitted reports to see if it matched with what was planned on the terms of reference and then forwarded them to the program unit for approval.

3. To visit the sites with the contractors, suggest any corrections, if there are any, or approve them to move forward based on the activity milestones.

It was important to ensure, prior to the payment phase, that the accomplished work met the payment terms that were signed and approved. In case of non-compliance, meetings were carried out to ensure that the overall team was aligned on the adjustments that were brought up, and they openly conversed with the contractors so that the adjustments were carried out accordingly.

5. CONCLUSIONS

1. To develop the comprehensive project management plan, the PMBOK Guide was used as a roadmap. The management plan, once in place, helped the waste recovery project to clarify the roles and responsibilities of everyone in the project, to outline the goals and objectives, and to know how to achieve these objectives. In other words, it provided a brighter view of the project to the team and to the stakeholders.

2. The project charter of the waste recovery project was initially elaborated to start writing and setting up a strong and comprehensive project management plan. It also acted as a roadmap providing some type of direction to the project, and it was an effective communication tool that was installed between the stakeholders and the project team. Face-to-face meetings, virtual meetings, and interviews were applied to develop this component. The waste recovery charter included the basic information of the company, the general and specific objectives of the project, the deliverables, requirements, project assumptions and constraints, initial and potential risks, and the allocated budget.

3. The scope of the project was defined through alternate analysis, and it was developed, monitored, controlled, and validated through the document called scope management plan. The work breakdown structure (WBS) was designed to plan the project activities. The stakeholders' requirements were discussed among the team through several meetings, and the roles and responsibilities were charted.

4. The schedule management plan was developed using the project charter information. The activity list was defined with the milestones. The relationships among the different

activities were established using the critical path method. Another tool that was used was the Gantt chart to indicate the time that each activity would take, which referred to the scheduling process.

5. To plan the cost management of the waste recovery project, the first element that was used was the project charter. A cost of estimation was drafted to be aligned with the project activities, and the expert judgement method was applied to gather the information. The estimating method that was mostly used was analogous estimating. The cost baseline was used as an input to be compared with the actual progress of the project.

6. To address the quality management plan, the cost and schedule information were used. Quality metrics were identified to control and measure the performance of the quality process implementation during the activities. As identified tools, the checklist for quality assurance, the quality assurance log and the quality control log were utilized.

7. To develop the resource management plan, meetings were held by the team to discuss the different resources, in terms of needs, for the project execution. The roles and responsibilities were clearly defined and known by all of the staff. In addition to this, the hierarchical structure of the waste recovery project was designed, and the different plan to acquire these resources was highly detailed.

8. To establish a good communication plan, it was important to take the different stakeholders into consideration to ensure that all of the relevant information was shared with them so that the project could progress with transparency. A communication plan for

the audience was developed as a result, highlighting the different methods of communication that were placed among the stakeholders with the team.

9. To prepare the risk management plan, the schedule management plan and the cost management plan were used as inputs to precisely identify the risks that the project would undergo. To identify and categorize the different risks, the risk breakdown structure was developed. The qualitative analysis method was applied to prepare the risk register. Tools and techniques were captured.

10. To create the procurement management plan, the roles and responsibilities were clearly defined for each team member. The process to conduct procurement was also explained in detail and illustrated with the evaluation report for the contractors, which is a template used within the organization for such processes.

11. The stakeholder management plan was developed with the identification of the key stakeholders and the identification of the requirements that the team had gathered from these stakeholders to perform and guide the project in the right direction. The L-Shape matrix was a method used to prioritize the stakeholders along with the identified requirements.

12. In order to keep track of the project performance, some key indicators were targeted and closely monitored. Firstly, it was important to measure the employees' performance so the quality of the work provided could be high-standard oriented and fully complied with the customers' needs. This was done through the total time spent on each task, in other words total time engaged for the project. Second, the satisfaction of the stakeholders was

captured through the rating scale from the delivery reports. Third, an assessment questionnaire was filled out by all participants post the trainings to point out the quality and substantial information that was conveyed throughout those sessions.

6. RECOMMENDATIONS

1. The government should be more involved and willing to collaborate in project implementations aiming to improve unfavorable Haitian life conditions.

2. To ensure that the integration management is effective, the team of the waste recovery project should not be number-limited, and it should be well organized.

3. Besides the project manager's roles and responsibilities to guarantee that the scope management is complete, more tasks should be delegated to some key team members.

4. The waste recovery management team should put a storage system in place to file all of the project documentation of all the knowledge areas so that they can be used in the elaboration of future projects.

5. The human resource unit of the company should ensure that the hired team is strongly skilled for the job description that it is being hired for.

6. The project manager of the waste recovery project should provide all reviews and audit reports to the project sponsors so that they can establish a first reference that will be published through the right channels as the first successful project run in Drouillard's area.

7. As a first project of its kind, there should be deeper research into the scope and cost integration during the design preparation.

REFERENCES

Association for Project Management. (2019). *APM Body of Knowledge* (7th ed.). Association for Project Management.

Association for Project Management. (n.d.). *What is a project?* Retrieved 1 May 2022, from https://www.apm.org.uk/resources/what-is-project-management/

Azamfirei, L. (2016). Knowledge is power. *The Journal of Critical Care Medicine, 2*(2), 65. https://doi.org/10.1515/jccm-2016-0014

Blake, J. (2004). Project managing the SDLC: using milestones to align project management and system development lifecycles and report project success. In *PMI Global Congress*, North America, Anaheim, CA. Newtown Square, PA. https://www.pmi.org/learning/library/project-managing-sdlc-8232

Educba. (2020). *Types of research methodology.* Retrieved 1 May 2022, from https://www.educba.com/types-of-research-methodology/

International Labour Office. (2007). The promotion of sustainable enterprises. In *International Labour Conference, 96th session, 2007; report VI; sixth item on the agenda*. Geneva: International Labour Organization. https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_093969.pdf

International Labour Office. (2012). *Gender Equality Action Plan 2010-15.* https://www.ilo.org/wcmsp5/groups/public/---dgreports/---gender/documents/publication/wcms_179106.pdf

International Labour Office. (2013). *Manual for Unrwa Employment Service Centres.* https://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_232639.pdf

International Labour Organization. (2021). *Jobs for Peace and Resilience: An ILO flagship programme Key facts and figures.* https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_738531.pdf

International Labour Organization. (n.d.a). *History of the ILO.* Retrieved 1 May 2022, from https://www.ilo.org/global/about-the-ilo/history/lang--en/index.htm

International Labour Organization. (n.d.b). *Mission and impact of the ILO.* Retrieved 1 May 2022, from https://www.ilo.org/global/about-the-ilo/mission-and-objectives/lang--en/index.htm

International Labour Organization. (n.d.c). *How the ILO works.* Retrieved 1 May 2022, from https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/lang--en/index.htm

Oxford Dictionary. (2011a). *Information*. In Oxford Advanced American Dictionary. https://www.oxfordlearnersdictionaries.com/definition/american_english/information

Oxford Dictionary. (2011b). *Source*. In Oxford Advanced American Dictionary. https://www.oxfordlearnersdictionaries.com/definition/english/source_1

Oxford Dictionary. (2011c). *Primary source*. In Oxford Advanced American Dictionary. https://www.oxfordlearnersdictionaries.com/definition/american_english/primary-source

Oxford Dictionary. (2011d). *Research.* In Oxford Advanced American Dictionary. https://www.oxfordlearnersdictionaries.com/definition/english/research_1?q=research

Project Management Institute. (2013). *A Guide to the Project Management Body of Knowledge: PMBOK® Guide* (5th ed.). Project Management Institute, Inc. 2013.

Project Management Institute. (2017). *A Guide to the Project Management Body of Knowledge: PMBOK® Guide* (6th ed.). Project Management Institute, Inc.

Solberg, W. (2000). *University of Illinois, (1894-1904): The Shaping of the University.* University of Illinois Press. Retrieved 1 May 2022, from https://www.library.illinois.edu/village/primarysource/mod1/pg2.htm

United Nations. (n.d.). *Sustainable Development Goals (SDGs).* Retrieved 1 May 2022, from https://unosd.un.org/content/sustainable-development-goals-sdgs

APPENDICES

Appendix A. Project Charter

UCI Universidad para la Cooperación Internacional		GSPM UCI Global School of Project Management Escuela Global de Dirección de Proyectos Escola Global de Gerenciamento de Projetos

PROJECT CHARTER	
(It formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: It provides a clear start and well-defined project boundaries)	
Date:	**Project Name:**
January 07, 2022	Project Management Plan for Waste Recovery Project in the Drouillard Area
Knowledge Areas / PM Processes:	**Application Area (Sector / Activity):**
Knowledge Areas: Scope, schedule, cost, time, quality, resource, communication, risk, procurement, and stakeholder	Sanitary - The waste recovery project is an environment-oriented project.
PM Processes: Initiating, planning, execution, monitoring and controlling, and closing	
Project Start Date:	**Project Finish Date:**
January 07, 2022	May 29, 2022
Project Objectives (General and Specific):	
General Objective:	
To create a project management plan that integrates sustainable principles that will help the waste recovery project to successfully achieve its outcome in the least favorable area of Drouillard.	

Specific Objectives:
1. To develop a project charter that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to the project and to set up the management plan
2. To create a sustainable scope management plan that defines key stakeholders and their unique requirements and expectations
3. To create a sustainable time management plan for assigning duration to work packages that can be tracked
4. To create a sustainable cost management plan for assigning cost to work packages
5. To develop a sustainable quality management plan for outlining the minimum stakeholder acceptance criterion
6. To create a human resource management plan for assigning resources to work packages in a manner that complies with international laws and conventions on labour
7. To develop a sustainable communication management plan for clearly defining the project communication strategies and line of reporting authority
8. To create a sustainable risk management plan that identifies risks and risk responses for risks directly related to the project and those that have sustainability implications
9. To develop a sustainable procurement management plan for identifying and assigning contracts to suppliers who can procure sustainable goods and services
10. To develop a stakeholder management plan that identifies key stakeholders and their level of interest and analyses how their influence might impact the project
Project Purpose or Justification (Merit and Expected Results):
This project aims to develop a management plan for the waste recovery venture. This formal document, once developed, will mostly describe how the project will be executed, monitored, and controlled throughout the phases so that the project managers, teams and key stakeholders who are involved can keep track of it. Drouillard, one of the least favorable areas of Port-au-Prince, has been facing severe health conditions problems due to the number of debris/waste that has never been collected by the authorities. That resulted in a blockage of the irrigation canals and then in flooding during heavy rains. The residents' health was in danger and started to be affected with contagious illnesses. The state authorities have not deployed medical rescues whatsoever to remediate the issue. The short-term solution remains to be the waste disposal through a calcination process done by volunteers. However, this solution is far from being a sustainable and ecologically satisfactory solution. After visiting the sites, the International Labour Organization (ILO) decided to come to the rescue. They are planning a project that will not only improve the living conditions of the Drouillard residents but also create jobs in the area. To carry out the project successfully, writing a comprehensive management plan is crucial. The project manager will break down the project into measurable deliverables that will be approved by the stakeholders .

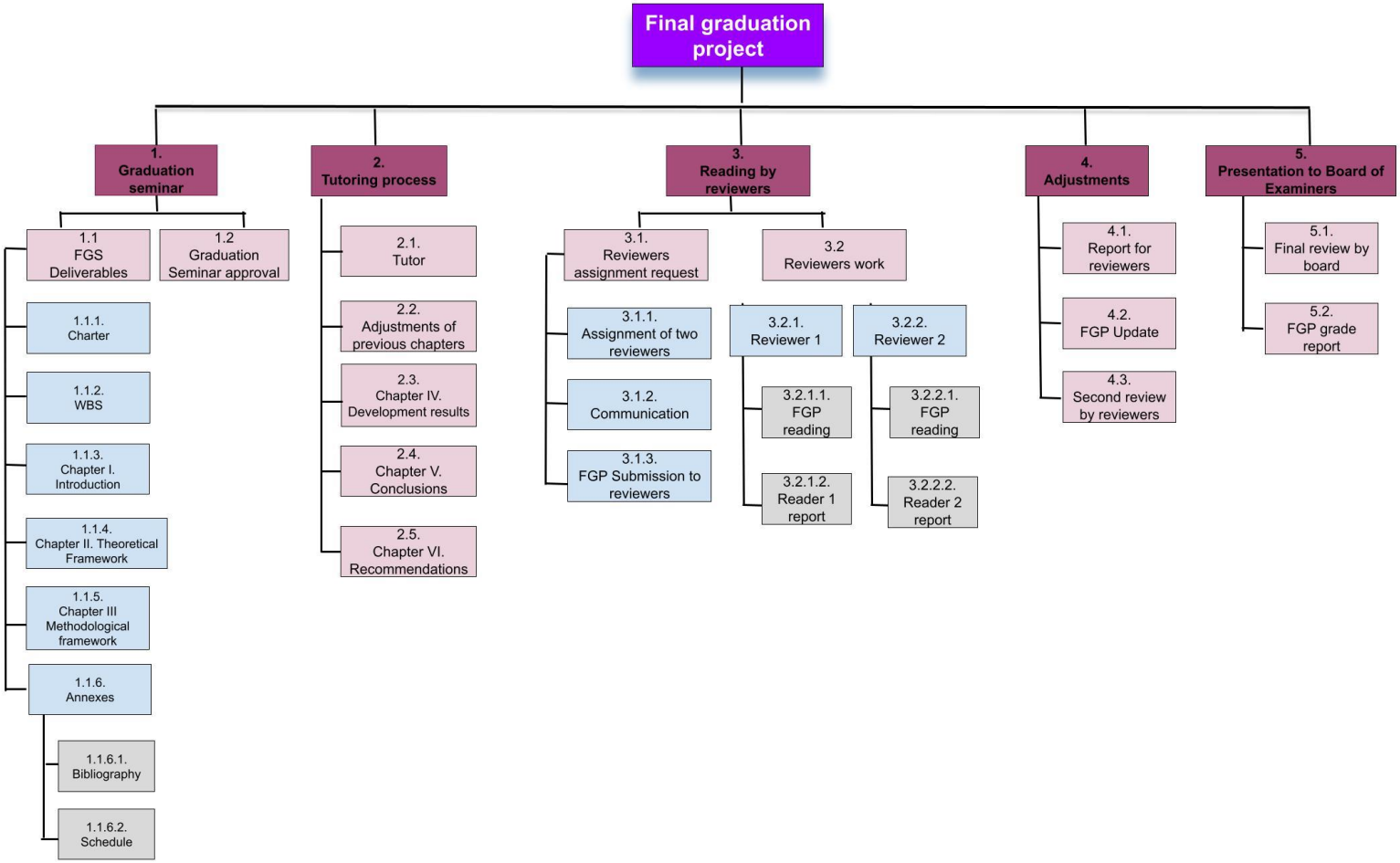
Description of the Product or Service to be Generated by the Project – Project Final Deliverables:
The final deliverable is the management plan document of the waste recovery project planned for the area of Drouillard in Port-au-Prince.
Assumptions:
1-**Schedule**: The project will be delivered within the three months allocated by the university. 2- **Resources**: The necessary resources will be available to help in the completion of the project. 3- **Quality**: Reviewers will be available to conduct expert reviews throughout the phases and make necessary suggestions for improvement.
Constraints:
1- **Time**: Given the critical situation of Haiti, information can be inaccessible. That could put the project behind schedule.
Preliminary Risks:
If the set milestones are not respected, the project management plan may not be completed in the given time.
Budget:
The general cost of the main deliverables of the waste recovery project will imply the different fees such as the translation and apostille of documents to be provided to allow the eligibility for the final project, printing, bidding, and shipping the project to Costa Rica. The budget for that process is then estimated to an amount of $2,500 US.
Milestones and Dates:

Milestone	**Start Date**	**End Date**
Final graduation project start	November 08, 2022	May 31, 2022
Graduation seminar	November 08, 2022	December 12, 2022
Tutoring process	February 14, 2022	May 09, 2022
Reading by reviewers	May 10, 2022	May 20, 2022
Adjustments	May 20, 2022	May 27, 2022
Defense to the Board of Examiners	May 28, 2022	May 31, 2022

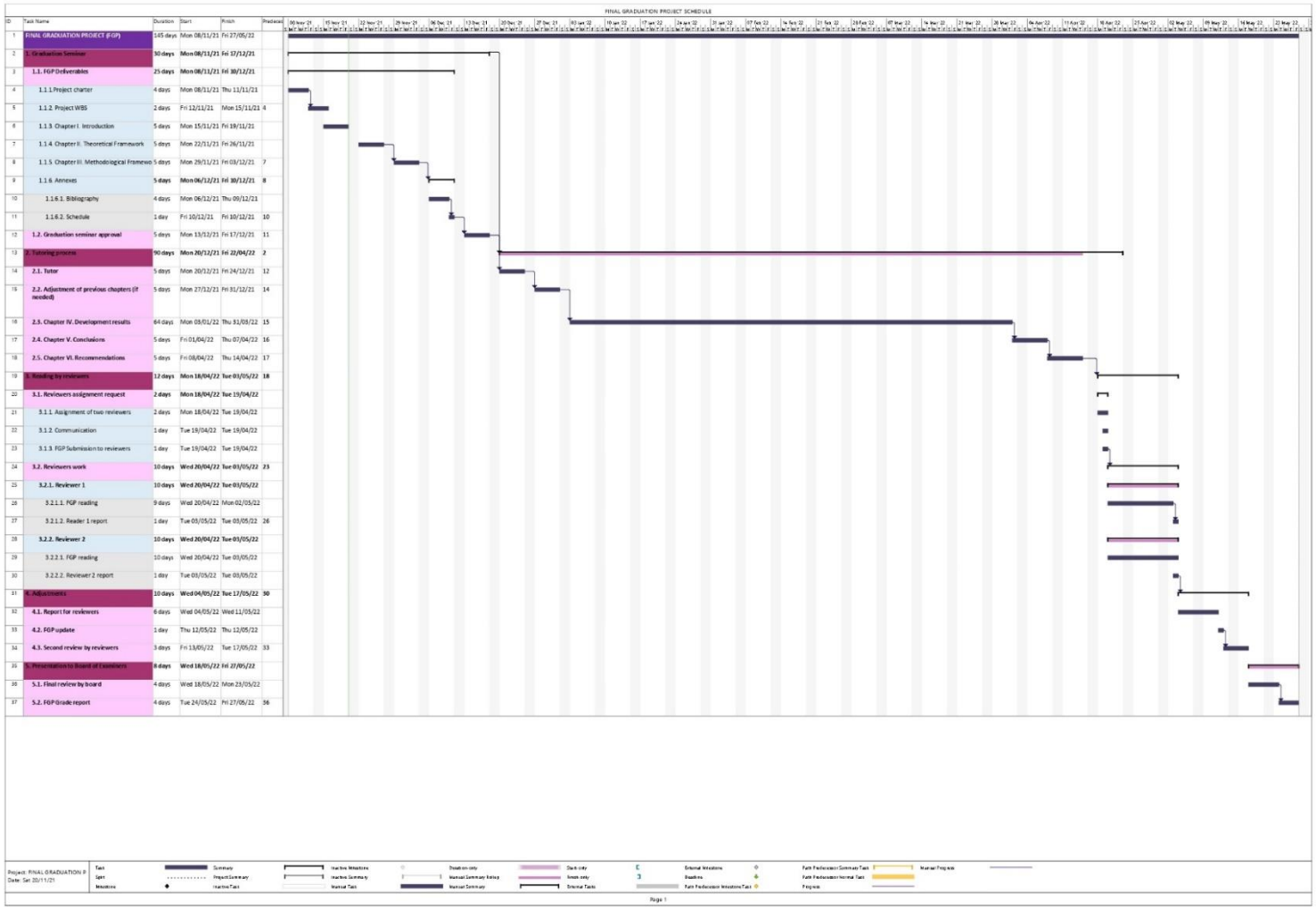
Relevant Historical Information:
The International Labour Organization is operating in many countries. It runs multiple programmes and projects that are centralized and decentralized. The ILO has integrated many of its existing technical projects into five flagship programmes, designed to enhance the efficiency and impact of its development cooperation with constituents on a global scale.
Stakeholders:

Direct stakeholders	
Academic assistant	
The accountability assistant	
The Dean	
The course facilitator	
The tutor	
The reviewers	
Indirect stakeholders	
The admission department	
The classmates	
Approval:	
Project Manager: Mrs. Gaetane Claude Garcon	Signature: 
Authorized by:	Signature:

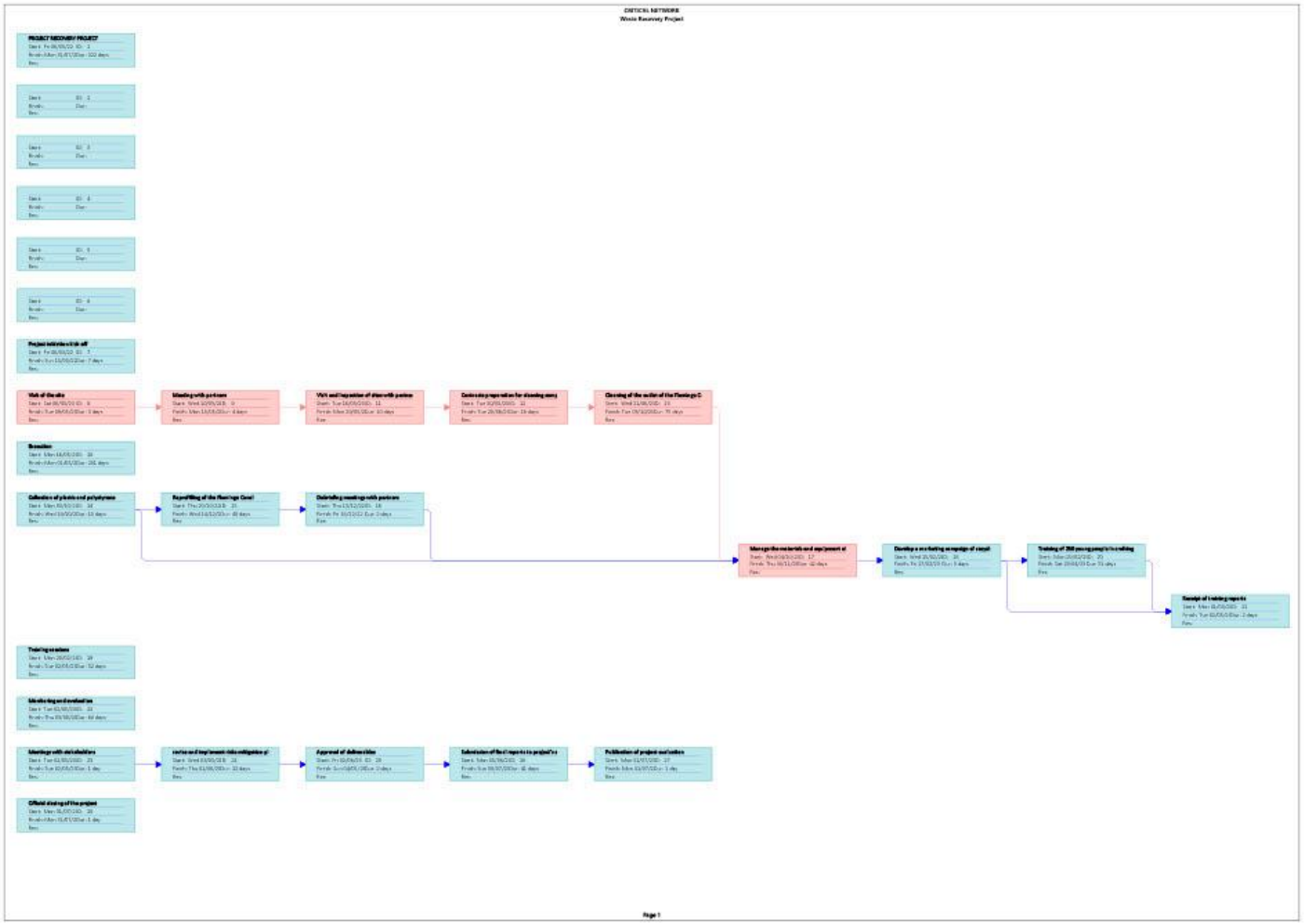
Appendix B. FGP WBS



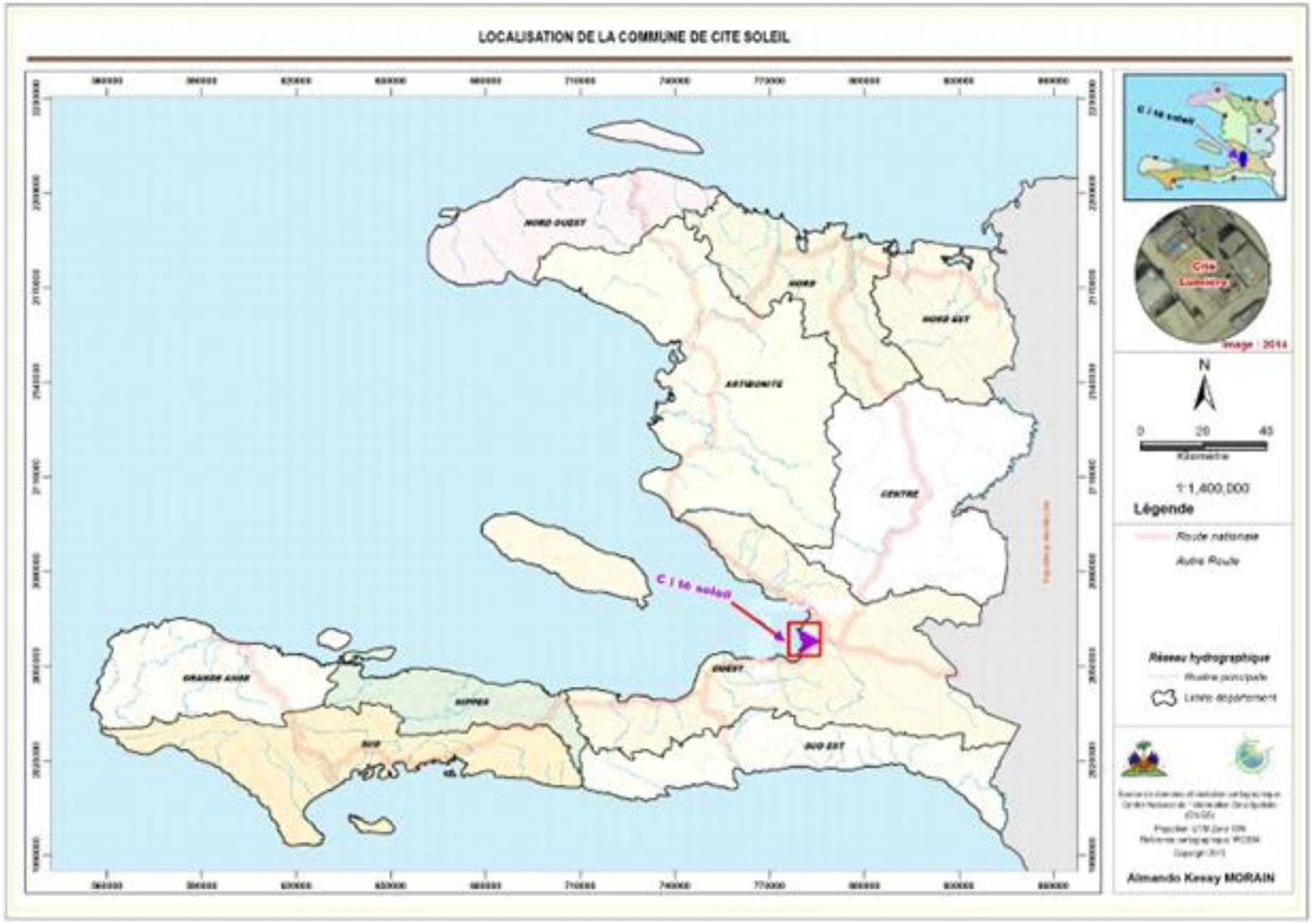
Appendix C. FGP Schedule



Appendix D. Critical Path of the Waste Recovery Project



Appendix E. Location of the Municipality of Cite Soleil - Drouillard



Appendix F. The Canal of Flamingo






Appendix G. Proofreading Letter

San José, May 12, 2022

Universidad para la Cooperación Internacional (UCI)

To Whom It May Concern:

Natalia Alvarado Mata, identification number 305030705, Bachelor in English with a focus on translation, hereby states that the project titled: **PROJECT MANAGEMENT PLAN FOR THE WASTE RECOVERY PROJECT**, carried out by Gaetane Claude Garcon, has been revised.

The project was carried out to obtain the **Master in Project Management (MPM)** Degree. Aspects such as paragraph form, language quirks in written language, orthography, punctuation, and other aspects related to syntax and grammar were inspected and proofread. Therefore, taking into account the changes that were made, the project is ready to be presented.

Sincerely,

Natalia Alvarado

Natalia Alvarado Mata
English Translator and Proofreader
natalia.alvarado@filologos.cr

NATALIA ALVARADO MATA (FIRMA)

Firmado digitalmente por NATALIA ALVARADO MATA (FIRMA)
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