UNIVERSIDAD PARA LA COOPERACION INTERNACIONAL
(UCI)

FINAL GRADUATION PROJECT:

PROJECT MANAGEMENT PLAN FOR THE CONSTRUCTION OF A CHICKEN FARM AT LORY, LOCALITY OF HAITI'S NORTHERN DEPARTMENT.

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DEDICATION

First, I am dedicating this work to the memory of my courageous father, Dickinson Toussaint, who passed away on November 6th – 2021, being thankful for all his sacrifices, his commitment, and support regarding my upliftment.

I dedicate this work to my wife (Stéphania), my mother (Nelta) and to my siblings (Karl & Darnelle) for their love and daily support.

Finally, I also dedicate this work to all those who will use it.

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ABSTRACT

The object of this study is to develop a Project Management Plan for the company named “LES ENTREPRISES IDEALE” for its chicken coop construction project to address all phases of the major project life cycle and to ensure that the project will be managed holistically as a whole. "LES ENTREPRISES IDEALE" is a very young private family business that works in the agricultural sector in the Northern Department of Haiti. The company shows structural, organizational, and strategic weaknesses in project management which have a negative impact on the rational and efficient management of its projects.

Whether in the design, initiation, execution, monitoring, evaluation or closure of projects, the company faces many problems. Regarding this fact, this study intends to develop for the company a Project Management Plan for its, soon to come, chicken coop building project. At the end, these final deliverables are developed: project charter, scope, time, cost, quality, human resource, communication, risk, procurement, and stakeholder management plans. For this, Action Research Method is prioritized with consideration for both, quantitative and qualitative approaches, as methods of investigation.

It is demonstrated that the poultry construction project can have a significant impact and contribution to improving the standard of living of the people of the concerned area. To be a real success, it is recommended to design the Project Management Plan for the company by always considering local realities such as beliefs, economy, culture, environment, social and educational factors.

Keywords: project, management, life cycle, plan, weaknesses, methods, action research, impact.

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ABBREVIATIONS AND ACRONYMS

AR: Action-Research

FGP: Final Graduation Project

GPM: Green Project Management

KA: Knowledge Areas

PMBOK: Project Management Body of Knowledge

PMI: Project Management Institute

PRiSM: Project integrating Sustainable Methodology

P5 Model : People, Planet, Prosperity, Processes and Products Model

SOW: Scope of Work

WBS: Work Breakdown Structure

EXECUTIVE SUMMARY

"LES ENTREPRISES IDEALE", is a 5-year-old agricultural family business that works in some areas of Haiti's Northern Department in the sector of food processing. In order to extend its streams of income, the company was considering the construction of a chicken coop capable of producing 5,000 broilers and 15,000 eggs per month. Being very young, the company came to the realization with time that it suffers weaknesses relative to project management and this, at every single phase. The projects executed in the past could have been better managed and more sustainable with the support of project management professionals. Therefore, for this coop/poultry construction project, the company's managers are resolute to not make the same mistakes and have voted to use the services of a Project Manager during all the construction process with the fundamental desire to ensure sustainability and secure the investment. That is why this study has been motivated by the fact that it aimed to ensure the construction of the poultry according to international standards, technical principles, and sustainability needs. The main purpose of this study is to develop a Project Management Plan for the company, for its chicken farm construction project, which clearly defines the roles, responsibilities, procedures, and processes that will result in completing the construction on-time, within budget, with high degree of quality, etc.

The general objective was to develop a Project Management Plan that considers all the optimal standards of poultry construction that meet the economic and socio-environmental characteristics of the locality of Lory in Haiti's Northern Department. The specific objectives were: to develop a Project Charter that can be used as a statement of the scope, objectives, and participants of the project; to create an effective Scope Management Plan, that ensures the project works include all elements required to complete the work; to create an effective Time/Schedule Management Plan to ensure the timely completion of the project; to create an effective Cost Management Plan to estimate, manage and control project finances; to develop a sustainable Quality Management Plan to guarantee that the project delivers a quality output that is fit for purpose with the minimum stakeholder's

acceptance criterion; to create a viable Human Resource Management Plan to make the most effective use of people involved with the project regarding national and international laws on labor; to develop an effective Communication Management Plan for ensuring communications on the project are planned and carried out appropriately for the collection, dissemination and storage of project's information; to create a Risk Management Plan that allows to quickly identify, assess, and manage risks and the most appropriate responses; to develop an effective Procurement Management Plan in order to acquire the goods and services from outside the performing project team and to develop a viable Stakeholders' Management Plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influences or determines how the team works; to develop a P5 Impact Analysis in order to support good decision making by identifying, describing and evaluating the project's potential impacts on sustainability.

As methodology for this study, Action Research was used. This methodology prioritized a large participation of everyone impacted by the project and helped to keep the client involved and committed to the work done. The Project Manager was not acting as an expert but as a facilitator. However, he made attention on having qualitative and quantitative results from the investigations.

As a result, the Project Management Plan was developed using the Research-Action methodology, in coordination with the Board of Directors of the company as Project Owner & Sponsor. In fact, the Project Manager met with "LES ENTREPRESES IDEALE" company's Board and Staff to compile fundamental information and has used the fifth edition of the *PMBOK® Guide*, the *GPM P5 standard* and other resources as a basic developmental tool for the "Chicken Farm Construction" Project Management. However, considering these 2 entities are neither Architect nor Engineers, the document has limits that should be reviewed with the Construction Firm, before the execution of the project.

1. INTRODUCTION

1.1. Background

"LES ENTREPRISES IDEALE" is a private family business that is evolving in the agricultural sector in Haiti. This young 5-year-old company is in the Northern Department of Haiti, more precisely in Cap-Haitian and surrounding areas such as "Plaine du Nord, Lory and Haut du Cap". Until now, it has been involved in the processing of agricultural products such as cocoa, peanuts and cassava for the respective production of refined chocolate, peanut butter, and cassava bread.

In order to extend its streams of income and improve the quality of life within the vicinity of its operating area, the company is currently considering the construction of a chicken coop capable of producing 5,000 broilers and 15,000 eggs per month. This project will be executed in the locality of Lory, a suburb of the city of Cap-Haitian.

1.2. Statement of the problem

With its 5 years of existence, the company is very young and consequently has structural, organizational, and strategic flaws. These weaknesses have a direct and negative impact on the rational and efficient management of human, material, and financial resources. Projects that are being considered by managers could be better developed or executed with the support of project development and management professionals.

Whether in the design, initiation, execution, monitoring, evaluation or closure of projects, the company faces many problems that could be avoided or controlled. This fact shows the importance for "LES ENTREPRISES IDEALE" to call on a project management professional if it wants to ensure its growth and longevity. Therefore, for this chicken coop construction project, the managers do not want to make the same mistakes and have therefore decided to have the support and advice of a Project Manager to ensure the total success of the different phases of this construction project.

1.3. Purpose

This project is motivated by the fact that it aims to ensure the construction of the coop/poultry according to the standards and technical principles in this area. The main purpose of this study is to develop a Project Management Plan for “LES ENTREPRISES IDEALE” chicken coop construction project. The Project Management Plan designed for the company, considering local realities (beliefs, economy, culture, environment, etc.), will be the cornerstone of the construction project’s success which will have a significant impact and contribution to the improvement of the standard of living of the people of Lory.

The Project Management Plan is the pivot tool regarding the implementation of the major project and documents assumptions and decisions regarding communication, management processes, execution, and overall project control. The ultimate purpose of the Project Management Plan is to clearly define the roles, responsibilities, procedures and processes that will result in the major project being managed so it could be completed: on time, within budget, with the highest degree of quality, in a safe manner for both the individuals working on the project and the traveling public, and in a manner in which the public trust, support, and confidence in the project will be maintained and above all to reach sustainability goals and needs.

Literature reviews have shown that project management teams have diverse responsibilities, but their most significant tasks are planning, estimating, scheduling, and executing the plan (Perminova et al. 2008). As said by Wright et al. in 2009, successful plan considers:

- the high level of uncertainty among project phases,
- changes in customer demands,
- setting up project deliverables in relation with project complexity and customer’s needs,
- project scheduling that involves tasks duration and resources (materials, equipment, people) allocations,
- risk management to identify, assess and mitigate their factors.

The Project Management Plan addresses all phases of the major project's life cycle and ensures that the project will be managed holistically and as a continuum. It is essential that the Project Management Plan establishes the metrics by which the success of the project is defined. It is expected that all sponsoring agencies will endorse the Project Management Plan.

1.4. General objective

To develop a Project Management Plan that considers all the optimal standards of coop construction that meets the economic and socio-environmental characteristics of the locality of Lory in Haiti's Northern Department.

1.5. Specific objectives

1) To develop a Project Charter that can be used as a statement of the scope, objectives, and participants of the project.

2) To create an effective Scope Management plan, that ensure the project works include all elements required to complete the work.

3) To create an effective Time Management plan ensuring the timely completion of the project.

4) To create an effective Cost Management plan to estimate, manage and control project finances.

5) To develop a sustainable Quality Management plan to guarantee the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.

6) To create a viable Human Resource Management plan to make the most effective use of people involved with the project regarding national and international laws on labor.

7) To develop an effective Communication Management plan ~~for~~ ensuring that communication~~s~~ on the project is planned and carried out appropriately for the collection, dissemination and storage of information.

8) To create a sustainable Risk Management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.

9) To develop an effective Procurement Management plan to acquire the goods and services from outside the performing project team.

10) To develop a viable Stakeholders Management plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influences or determines how the team works.

11) To develop a P5 Impact Analysis to support good decision making by identifying, describing, and evaluating the project's potential impacts on sustainability.

2. THEORETICAL FRAMEWORK

2.1. Company/Enterprise framework

2.1.1. Company/Enterprise background

Set up in 2016 by the ‘‘MESIDOR & Associated’’ family, the company was named "LES ENTREPRISES IDEALE". This young company was born following some thoughts on the potential food shortages and needs in ~~of~~ the Northern Region of Haiti. Indeed, just like the country in general, the northern region depends on more than 80% of the food coming from the Dominican Republic. The goal behind the initiative to set up this company has two axes. First, providing support to the agricultural sector, particularly in agri-food processing and livestock. Then, create jobs or trade opportunities at the level of surrounding areas where the company intends to intervene.

2.1.2. Mission and vision statements

Through the mission statement, the company’s leadership communicates the reason for being and how it aspires to serve its key stakeholders. The vision statement puts the focus on the purpose and aspirations. Also, the leadership of “LES ENTREPRISES IDEALE” adds more values to the company’s beliefs that can help reach the objectives of the mission or vision statements.

When it comes to its mission the company intends to:

- Contribute to the economic development of the geographical areas in which it operates and develops its activities, offering the best quality in agri-food processing and livestock products.
- Seek the highest profitability of each operation contributing to its development as well as that of its customers and suppliers, with both agricultural and livestock production and marketing.

The company defines its Vision as follows:

- To be a reference in the agricultural and livestock development of the community.

- To achieve sustainable growth and balance of the company with quality products supported by an efficient team.

For the “values” the leadership is focused on:

- Honesty, teamwork and transparency
- Efficiency in management and best quality of production and services
- Social responsibility, commitment, and respect of the environment
- High achievement in the search for profitability, growth, and survival.

2.1.3. Organizational structure

The company is managed by an ***Executive Manager*** (as described in Figure 1. below) who does the overall supervision and defines the main strategic lines in agreement with the Board of Directors of which he is the President. He has a right of scrutiny and approves the decisions of the other Managers.

Production & Operations Manager is a member of the Board of Directors and deals mainly with all technical, normative, quantitative, and qualitative aspects related to the company’s production.

General Services Manager is also a member of the Board of Directors, and he is responsible for managing the stock and the company's relationship with the outside world (customers and suppliers). In other words, this sub-directorate manages everything related to stock, inventory, sales of the company's products and the acquisition of raw materials or other goods and services to keep operations and production efficient.

Administrative & Finance Manager is the fourth and last member of the Board of Directors. He manages everything related to human resources within the company (recruitment, contract management, salaries, schedules, discipline, benefits, training, etc.) and accounting (bank accounts management, payments, etc.).

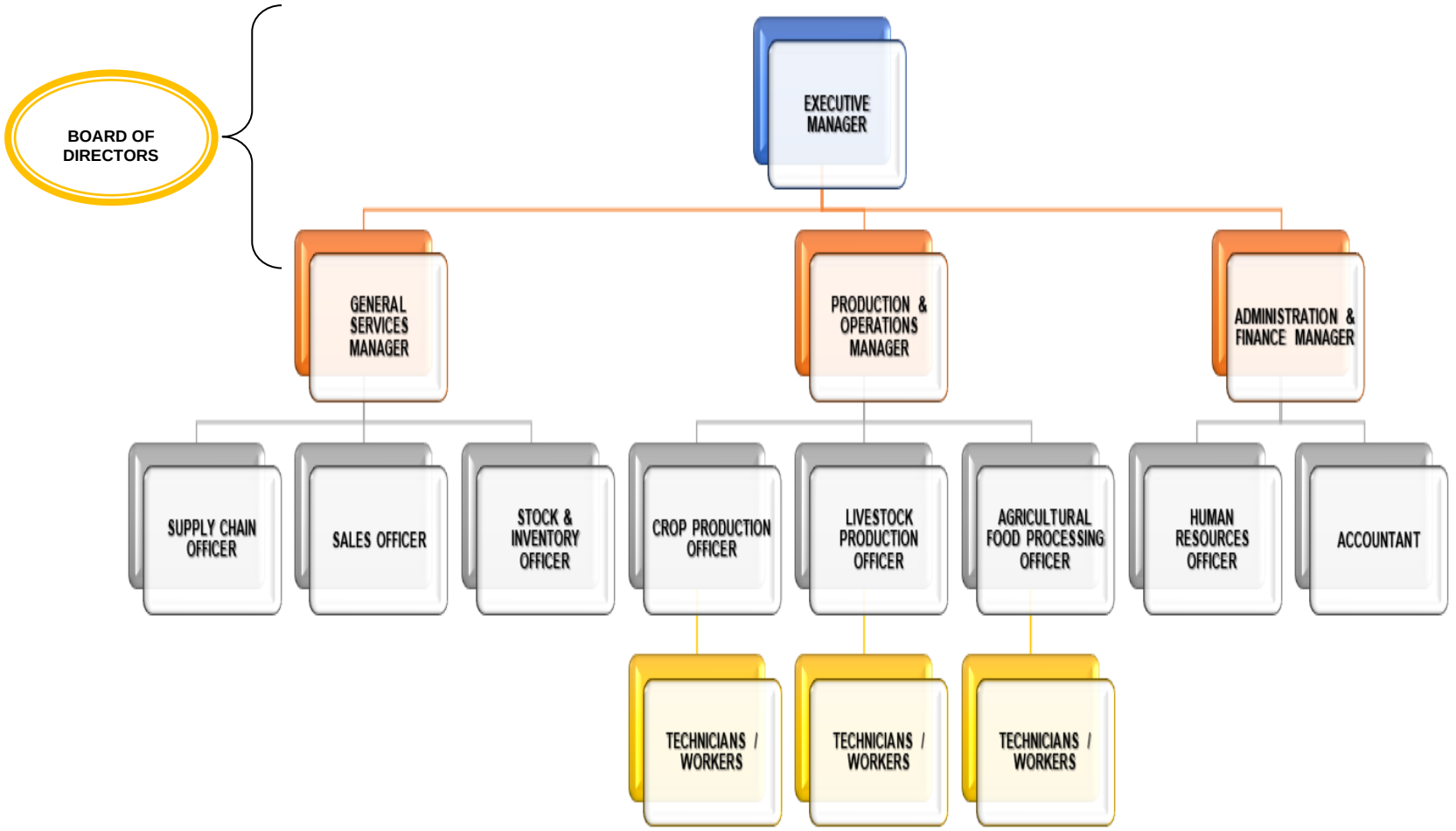

Figure 1. Organizational structure

(Source: Constitutive Act of "LES ENTREPRISES IDEALE)

2.1.4. Products offered

Initially, the company produced only cassava bread and "mamba" (peanut butter). Cassava bread is made from cassava flour *(Manihot esculenta)* to which are added several ingredients such as salt, sugar, ginger, peanut, etc. making more flavor choices available. The "mamba" is produced with peanut to which salt, sugar or chili is added. In 2020, the company embarked on the production of refined chocolate to be consumed without cooking.

As a new range of product expansion, "LES ENTREPRISES IDEALE" is now preparing a chicken coop construction to produce broilers and chicken eggs. Wanting to ensure the full success of this major initiative, the Board of Directors decided to call on a project management professional to support them in the design and execution of the Project Management Plan.

2.2. Project Management concepts

2.2.1. Project

According to the PMBOK (Project Management Body of Knowledge) 3rd edition, a project is defined as a “temporary endeavor with a beginning and an end and it must be used to create a unique product, service or result”. Further, it is progressively elaborated. What this definition of a project means is that projects are those activities that cannot go on indefinitely and must have a defined purpose.

A typical project has the following characteristics:

- Timeline: a project has a definite timeline with measurable starting and end point.
- Resources: a project has limited resource of capital and manpower.
- Tools: special types of tools and techniques are used for project management (project charter, Gantt Charts, etc.)
- Team: a project management requires diverse team stretching across departments and functions.

2.2.2. Project management

A project in any organization or company is based on collaboration across departments to achieve a single well-defined objective. The process of planning, organizing, and managing resources to achieve the organizational objective is called project management.

Juneja, in the article published in 2021, says that project management is very important in the production of goods and services. From the start to final production of product or service, each step can be categorized as individual projects. All projects require a project manager, who leads the project to its logical conclusion. A Project manager is responsible for appointing team members with different backgrounds but essential in the completion of the project.

2.2.3. Project life cycle

The project manager and project team have one shared goal: to carry out the work of the project for the purpose of meeting the project's objectives. Every project has beginnings, a middle period during which activities move the project toward completion, and an ending (either successful or unsuccessful). A standard project typically has the following four major phases (each with its own agenda of tasks and issues): initiation, planning, implementation (execution), and closure. Taken together, these phases represent the path a project takes from the beginning to its end and are generally referred to as the project life cycle (Westland, 2007).

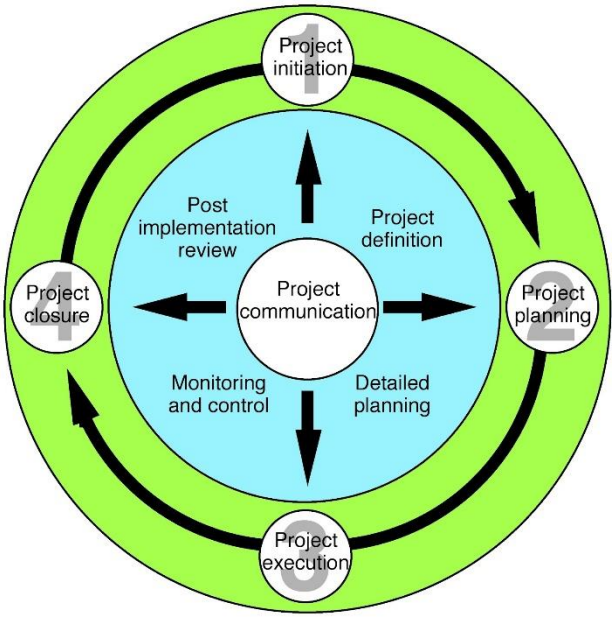

Figure 2. Project phases and their interactions

2.2.4. Project management processes

According to Awaysa, 2016, a typical project is divided into four process groups. Each process group of the project has its own importance and impact on the overall success of the project. The process groups interact over the project's life cycle.

- Project Initiation: In this phase of the project, feedback received from customers is analyzed and brainstorming is done as to develop new product or modify existing product to meet the new demands.
- Project Planning: In this phase of the project, efforts are made to define the solution for the identified problem and to establish definite milestones.
- Project Execution: In this phase all activities and milestones established in the earlier phases are executed in a timely and orderly manner. This phase utilizes the maximum level of resources accessible.
- Project Monitoring & Control: this process group tracks, reviews, and orchestrates the progress and performance of the project. It also identifies

any areas where changes to the project management plan are required and initiates the required changes.

- Project Closure: This is the last phase of the project. In this phase, final product or service is handed over to the operations team for commercial production.

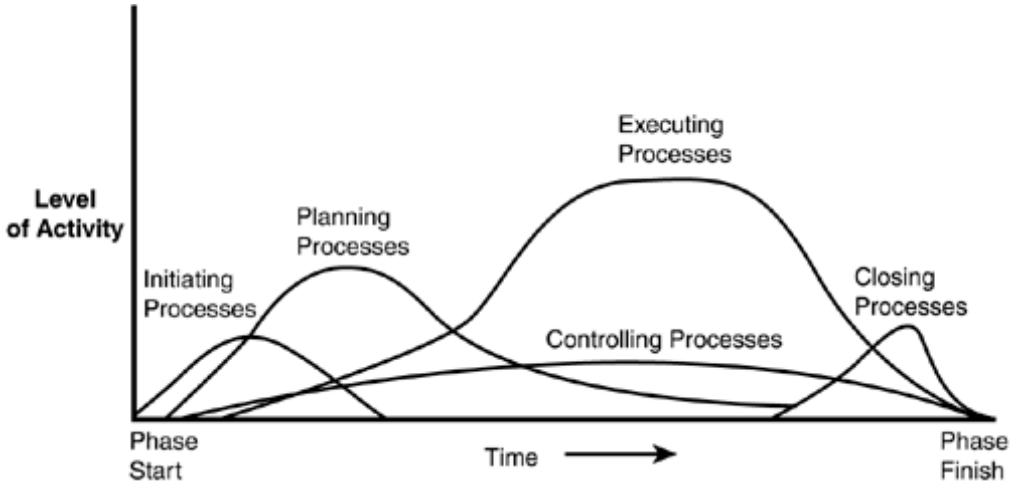

Figure 3. Interactions between the process groups (source: PMI, 2013)

2.2.5. Project management knowledge areas

PMI defines a Knowledge Area (KA) in the PMBOK® Guide — Sixth Edition Glossary as follows: “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”. According to the *PMBOK® Guide* — Sixth Edition, there are 10 KA.

Harrin, 2021, says that basically each KA is a category of concepts and processes with a common goal, and she defines them as follows:

- Integration Management: The point of this whole Knowledge Area is to make it clear that everything about project management overlaps and needs to be managed as a holistic whole.
- Scope Management: This Knowledge Area looks at everything to do with managing project scope. Ultimately, the result is that once you have worked

through the relevant processes, you know what the project is going to deliver.

- Schedule Management: Project Schedule Management is all about making a detailed plan to tell everyone when the project will deliver what is in the requirements. This KA covers everything related to defining the work required to deliver the scope, putting those tasks in the right order, estimating how long they will take to be executed and building the project schedule. The domain also covers keeping the schedule up to date.

- Cost Management: Cost management is basically managing project funding. Under the umbrella of cost management, how much is to be allocated when approaching budgeting, costs estimation, project budget creation, tracking and budget control.

- Quality Management: Many knowledge work-related projects don't take the same regimented approach to quality. However, it's an important Knowledge Area to be aware of and use appropriately to ensure ~~a~~ quality result on your project. Project Quality Management involves preparing a list of metrics, followed by implementing the plan, carrying out quality-related tasks and making course-corrections as much as necessary to keep the project delivering the outputs you expect.

- Resource Management: It's the domain where you work out what you need to get the project done. Resources are typically people but could also be other things like equipment, IT hardware and software, materials like sand, gravel or other components, facilities e.g., an office you must rent for the duration of the project, office gadgets like projectors, etc. Money can be counted as a resource as well. This Knowledge Area covers planning how you are going to do resource management, estimating what resources you need, acquiring the resources you need and ensuring the physical resources you're using are available when necessary. The utilization of resources will be tracked, and corrective action taken if necessary. The

Resource Management Knowledge Area also covers developing project team and managing the team.

- Communications Management: In this Knowledge Area, it is about creating a communications management plan, to do communications i.e., carry out the plan, send briefings out, give presentations or whatever is necessary, in order to monitor the success of these communications, to make changes as appropriate to ensure your next communications are effectively received and acted on.

- Risk Management: The Risk Management Knowledge Area covers an adequate overview of what you need to do to manage risk on your project. Within this KA, project managers must plan how to manage risk on the project and creating a risk management plan, identify risks, analyze risks (both qualitatively and quantitatively), plan the risk response based on the analysis, carry out the risk response activities, monitor risk to check the success of the response activities, and acting as necessary. Risk management is a team effort, and this is a KA that will be using repeatedly until it becomes second nature.

- Procurement Management: this is the domain to plan the procurements required and create a statement of work, plan how you will make decisions about vendors, carry out the procurement exercise to select a vendor, manage the relationship with the vendor while they do the work, close the procurement contract at the end of the work.

- Stakeholder Management: This KA helps identify the people involved and affected by the project, plan how they will be engaged in the work, manage the activities to engage them and gather feedback on whether the activities were successful or not, act on the feedback to improve stakeholder engagement work for next time. This is also the area with almost the highest challenges, because often people don’t act in the expected way.

The KA appear in that order as there is some logic to how they are mapped to the project lifecycle. For example, it helps to know the scope of a project before you plan the schedule.

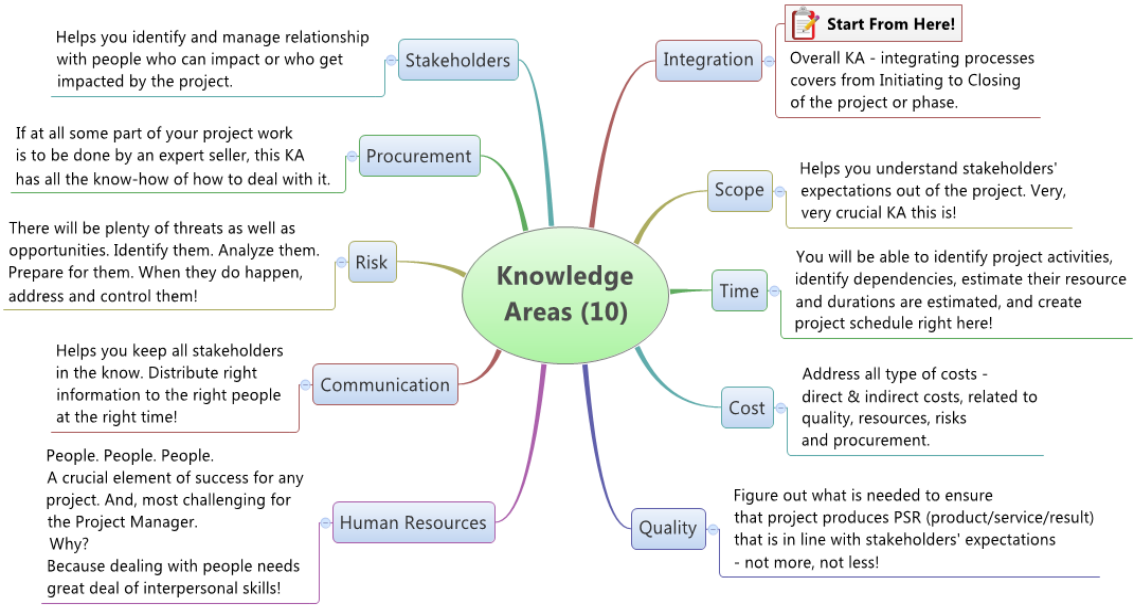

Figure 4. Project Management Knowledge Areas (KA) summary

2.3. Standards for the construction of a poultry / chicken coop

The economical growing of chickens starts from the correct and adequate design of the building for the appropriate breed and the environment of the location. The designs of the poultry house for hens or broilers in some countries are not always based on engineering and scientific foundations, but on some incorrect information, and practices or lack of accurate information. For these reasons and others there is a high mortality rate in poultry/coop construction when routinely built in the absence of scientific and engineering knowledge and rules in poultry housing design that leads to different sizes and many non-standard types of sheds. In many situations it is not adequate for large productions, or using standard mechanization (feeding, drinking systems) for poultry production. Selecting the correct dimensions for the poultry house helps with the use of standard mechanization and adequate design of the ventilation system. Not using scientific rules in poultry building design could create production problems, high production costs, lower returns, and wastage of different types of energy (Alchalabi, 2014).

There are three types of chicken coop:

- Open-side poultry house
- Front and back sides
- Controlled environment house

The dimensions of a building (width, height, open area) are determined in the first place by the type of ventilation, for broiler farming it is usually natural ventilation. The practical standards to consider for successful natural ventilation are:

- Optimal width = 8 -10 m, maximum = 12 m
- Surface of the air inlet openings (side walls) = minimum 8% of the floor area.
- Surface air outlet (roof) = 2 to 3% of the floor area.
- Significant vertical distance between the inlet (as low as possible) and air outlet (highest possible) openings: chicken coop with a steep slope (at least 30%).
- Roof shutters are essential to regulate air flows.
- Roof overflows (at least 50 cm) is necessary to protect the openings from sunlight and slope.

2.3.1. Density inside buildings according to farming methods

Broiler:

- 10-12 chickens per 1 m² if the ventilation is static and the drinking trough and feeder system is manual.
- 15 to 18 chickens if the ventilation inside the building is dynamic (fan, extractor and bad-cooling…)

Hens:

- Floor breeding: 7 to 8 pullets per 1 m²
- Cage breeding: 30 to 50 per 1 m² depending on the number of floors inside the chicken coop.

2.4. Green construction

Green construction looks beyond the readily apparent aspects of the office or building to create a space that addresses the comfort, health, and broader

environmental impacts of the construction/remodeling process. Buildings, infrastructures, and the environment are inextricably linked. Energy, materials, water, and land are all consumed in the construction and operation of buildings and infrastructures. Green construction aims to create the balance between what we seek to build and what our environment can ultimately support.

2.5. Sustainable Project Management

According to Silvius (Considering Sustainability in Project Management Processes, 2015): "*Sustainable Project Management is the planning, monitoring and controlling of project delivery and support processes, with consideration of the environmental, economic and social aspects of the life-cycle of the project's resources, processes, deliverables and effects, aimed at realizing benefits for stakeholders, and performed in a transparent, fair and ethical way that includes proactive stakeholder participation.*"

Sustainability in project management is defined by the "Green Project Management", part of the PMI (Project Management Institute) as follows: "*Since the adoption of ISO 14001, which exists to help organizations minimize how their operations impact the environment and comply with applicable laws, the subject of sustainability through project management has remained nebulous and has suffered a lack of continuity among organizations wishing to use project management as a mechanism to impart change.*"

The Green Project Management - *GPM P5™ Standard for Sustainability in Project Management*, *version 2.0* - relates that GPM's recent study and *Insights on Sustainable Project Management*, found that among the over one thousand executives surveyed, 96% believe that projects and project management are integral to sustainable development. 100% of these same executives believe that project managers should understand how important sustainability is to their project. Among project managers, 71% reported that the P5 Standard improved sustainability in their projects. Of the project managers who actively use P5 in projects, 95% were able to realize increased sustainability benefits.

2.6. Definition of P5 concept

The GPM Global PRiSM methodology advocates for the usage of the *GPM P5* (People, Planet, Prosperity, Processes and Products) Model, which allows for a facilitated exercise initiated during the initiation phase of a project and throughout the project at key milestones. The GPM P5 model has evolved over the years from an analysis, compilation and synthesis several sources to provide the world leading sustainable project and product reference model. The objective is to take an overall cradle to cradle asset life-cycle perspective to define and prioritize sustainability threats and opportunities from a 360^0 standpoint (Carboni et al, 2018).

The P5 provides key decision makers across the organizational change delivery, disciplines the information and insight they need to lead the change initiative. This will significantly improve the project's value, mitigate risks, improve benefits and maximize the positive impact to the environment, society and economy. The P5 is also an excellent catalyst to both advocate for, support, and align with the organizations sustainable management strategies, policies and procedures. Further, it will also facilitate cooperation and communication across the organization's functions to ensure awareness and understanding to align with the organization's strategic goals and objectives.

To use P5 the project stakeholder's understanding of the business case, project charter, project requirements and organizational sustainability goals, as well as reviewing lessons learned from previous projects are critical. Using the GPM P5 is like a Strength / Weakness / Opportunity / Threat Analysis (SWOT) or Political / Economic / Social / Technological / Legal / Environmental Analysis (PESTLE) for identifying risks (threats and opportunities) where these similar reviews would be required. The GPM P5 is a straightforward tool and technique to aid in identifying and mitigating sustainability risks within projects (Carboni et al, 2013).

PROJECT										
Product Impacts								Process (Project Management) Impacts		
Lifespan of Product			Servicing of Product					Effectiveness of Project Processes	Efficiency of Project Processes	Fairness of Project Processes
People (Social) Impacts				Planet (Environmental) Impacts				Prosperity (Economic) Impacts		
Labor Practices and Decent Work	Society and Customers	Human Rights	Ethical Behavior	Transport	Energy	Land, Air, and Water	Consump-tion	Business Case Analysis	Business Agility	Economic Stimulation
Employment and Staffing	Community Support	Non-discrimi-nation	Procurement Practices	Local Procurement	Energy Consumption	Biological Diversity	Recycling and Reuse	Modeling and Simulation	Flexibility/ Optionality	Local Economic Impact
Labor/ Management Relations	Public Policy/ Compliance	Age-Appropriate Labor	Anti-Corruption	Digital Communi-cation	CO2 Emissions	Water and Air Quality	Disposal	Present Value	Business Flexibility	Indirect Benefits
Project Health and Safety	Protection for Indigenous & Tribal Peoples	Voluntary Labor	Fair Competition	Traveling and Commuting	Clean Energy Return	Water Consumption	Contami-nation and Pollution	Direct Financial Benefits		
Training and Education	Customer Health and Safety			Logistics	Renewable Energy	Sanitary Water Displacement	Waste Generation	Return on Investment		
Organizational Learning	Product and Service Labeling							Benefit-Cost Ratio		
Diversity and Equal Opportunity	Mkt. Comm. and Advertising							Internal Rate of Return		
Local Competence Development	Customer Privacy									

Figure 5. GPM's P5 (People, Planet, Prosperity, Processes and Products) Model

3. METHODOLOGICAL FRAMEWORK

As it is indicated in the title, this chapter includes the methodology of the work. In more details, in this part the author outlines the strategy, the approach, the methods, the processes, the type of data analysis, the ethical considerations and the research limitations of the Project.

3.1. Information sources

Data collection plays a very crucial role in research. There are different methods used to gather information, all of which fall into two sources categories, i.e., primary and secondary sources (Douglas, 2015).

3.1.1. Primary sources

In research and academics, a primary source refers to information collected from sources that witnessed or experienced an event firsthand. These can be historical documents, literary texts, artistic works, experiments, journal entries, surveys, and interviews. A primary source is also called primary data and contains original information that is not derived from interpretation, summarizing, or analyzing someone else's work, according to Monaghan (2002).

For this FGP, it has been added also: emails, face to face interviews, conference calls and meetings via electronic applications such as Skype, Google meet or Zoom.

3.1.2. Secondary sources

Secondary sources are work that has been based on primary sources. They are usually an interpretation, a summary, an analysis, or a review. Secondary sources were created by someone who did not experience first-hand or participate in the events or conditions being researched. A secondary source interprets and analyzes primary sources. These sources are one or more steps removed from the event. Secondary sources may contain pictures, quotes, or graphics of primary sources. For this FGP, secondary sources include PMBoK, textbooks, articles, research documents, online publications, etc. all related to project management and poultry construction.

Chart 1. Information sources (Source: FGP Author)

Objectives	Information sources	
	Primary	Secondary
To develop a Project Charter that can be used as a statement of the scope, objectives, and participants of a project.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To create an effective Scope management plan, that ensure the project works include all elements required to complete the work.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To create an effective Time management plan for ensuring the timely completion of the project.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To create an effective Cost management plan to estimate, manage and control project finances.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications

To develop a sustainable Quality management plan to guarantee the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To create a viable Human Resource management plan in order to make the most effective use of people involved with the project regarding national and international laws on labor.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To develop an effective Communication management plan for ensuring communications on the project are planned and carried out appropriately for the collection, diffusion and storage of information.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To create a sustainable Risk management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications

To develop an effective Procurement management plan to acquire the goods and services from outside the performing project team.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications
To develop a viable Stakeholders management plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influence or determine how the team works.	emails, face to face interviews, conference calls, meetings via Skype, Google meet or Zoom	PMBoK® Guide, articles, textbooks, research documents, online publications

3.2. Research methods

Scientific research is a dynamic process or rational approach to examining problems to be solved and obtaining precise answers from investigations. This process is characterized by the fact that it is systematic and rigorous and leads to the acquisition of new knowledge. The functions of research are to describe, explain, understand, control, and predict facts, phenomena, and behaviors. Scientific rigor is guided by the notion of objectivity in which instance the researcher deals only with facts, within a framework defined by the scientific community (Van der Maren, 1996).

3.2.1. Investigation approaches

The modes of investigation are determined by the research paradigms and the objectives of the researcher. The latter has the choice between three modes of investigation: the quantitative approach, the qualitative approach, and the mixed approach.

3.2.2. Quantitative approach

This approach aims to collect observable and quantifiable data. This type of research consists of describing, explaining, controlling, and predicting based on the observation of facts and events, existing independently of the researcher, objective facts.

This method is based on quantitative data collection tools or techniques whose fidelity and validity are in principle assured. It results in numerical data that make it possible to make descriptive analysis, tables and graphs, statistical analysis to search for links between variables or factors, correlation, or association analysis etc.

To bring theoretical propositions closer to reality, or to confront hypothesis with observation, it is necessary to operationalize concepts, that is, to establish a systematic relationship between concepts and observable reality, by means of indicators. Indicators can be defined as "directly observable signs, behaviors or reactions by which the dimensions of a concept are identified at the level of reality".

To operationalize a concept is therefore to associate it with one or more indicators that will make it possible to accurately distinguish the variations observed in relation to the concept. Distinguishing variations means measuring: the operationalization of a concept therefore leads to measurement.

3.2.3. Qualitative approach

In the qualitative approach, the researcher starts from a concrete situation involving a singularity that must be understood and not demonstrated, proven, or controlled. It wants to give meaning to the phenomenon through or beyond the observation, description of the interpretation and appreciation of the context and the phenomenon as it presents itself.

This method uses qualitative research techniques to study particular facts (case studies, observation, semi-structured or unstructured interviews, etc.). Qualitative mode provides content data, not measurement data.

3.2.4. Mixed approach

This approach is a combination of the previous two. It allows the researcher to mobilize both the advantages of the quantitative mode and those of the qualitative mode. This conduct helps to master the phenomenon in all its dimensions. The two approaches are therefore not opposed; they complement each other.

3.2.5. Action Research (AR) method

The AR is a family of research methods initially developed in the United States and Scandinavian countries in reaction to the separation of pure and applied research. The action research (AR) method invites professionals from the company or community being studied to actively participate with researchers throughout the study process, i.e., from the initial design of the study's objectives to the final presentation of the results and discussions of their application. The AR therefore contrasts with most research methods since it gives an active place to the subjects and demystifies the role of the researcher. Indeed, the latter is not considered as an expert who will draw a project, gather information, interpret results, and give recommendations, but as a facilitator. The AR commits the members of an organization to seek information and ideas to guide their future actions. The

process begins with the professionals of the organization concerned. The AR recommends a dialogue between the different actors whose objective is to highlight the problem existing in the organization. It is only by working with members of the organization that it is possible to diagnose these problems. ***AR is open to the use of a variety of research techniques, whether quantitative or qualitative.***

The AR asks the actors of the organization to actively participate with the researchers in the conduct of the research from the beginning (problematic) to the end (presentation of the results). This is what differs from normal research where actors are much more passive. The richness and quality of research depends on the ability of each group of individuals to collaborate in the analysis of their work situation, in the expertise they will make of it to create new knowledge. In AR, the role of actors is different from conventional research. Here, it is more about learning in common. In action research, actors are involved to find ideas and information to guide actions to be taken in the future.

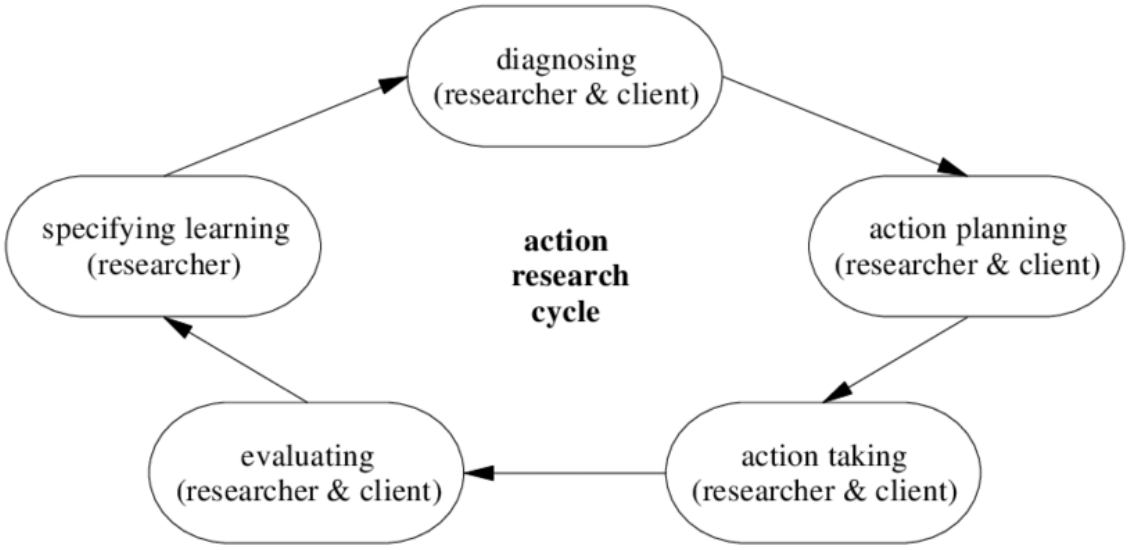

Figure 4. Action research cycle

Chart 2. Research methods (Source: FGP Author)

Objectives	**Research methods** **Action research method** *(Considering qualitative and quantitative approaches)*
To develop a Project Charter that can be used as a statement of the scope, objectives, and participants of a project.	The creation of the Project charter will be carried out based on the information received from the client. - Interviews and Focus Group
To create an effective Scope management plan, that ensures the project works including all elements required to complete the work.	The objectives of the project will be determined by the company's managers and the Project Manager. They will be detailed in intermediate objectives (Milestone), having a purpose and a deadline of their own, based on the information received from the client. - Interviews, Focus Group and archive study
To create an effective Time management plan in order to ensure the timely completion of the project.	The tasks will be sequenced in a schedule, chronologically or evolving in parallel, considering a margin of safety. The Gantt chart will be designed based on the established schedule, based on the information received from the client. - Interviews, Focus Group and archive study

To create an effective Cost management plan to estimate, manage and control project finances.	We will collect and analyze the needs, requests, and resources available for the implementation of the project, based on the information received from the client. - Interviews, Focus Group and archive study
To develop a sustainable Quality management plan to guarantee the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.	We will define the project's quality policies, procedures, criteria, areas of application, roles, responsibilities, and authorities, based on the information received from the client. - Interviews, Focus Group and archive study
To create a viable Human Resource management plan in order to make the most effective use of people involved with the project regarding national and international laws on labor.	We Will identify and document project roles, responsibilities, required skills, reporting relationships, and create a staffing management plan, based on the information received from the client. - Interviews, Focus Group and archive study
To develop an effective Communication management plan in order to ensure that communications on the project are planned and carried out appropriately for the collection, dissemination and storage of information.	We will define requirements for project communication, information distribution and will set-up the communications' framework for the company, based on the information received from the client. - Interviews, Focus Group, observation and archive study

To create a sustainable Risk management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.	We will define the processes for risk management planning, identification, analysis, monitoring and control, based on the information received from the client. - Interviews, Focus Group, observation and archive study
To develop an effective Procurement management plan in order to acquire the goods and services from outside the performing project team.	We will define the procurement requirements for the project and how it will be managed from developing procurement documentation through contract closure, based on the information received from the client. - Interviews, Focus Group and archive study
To develop a viable stakeholders management plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influence or determine how the team works.	We will define the processes necessary to identify the stakeholders, to analyze their expectations and their impact on the project, to develop appropriate management strategies to effectively mobilize stakeholders, based on the information received from the client. - Interviews, Focus Group and archive study
To develop a P5 Impact Analysis to support good decision making by identifying, describing, and evaluating the project's potential impacts on sustainability.	We will define and prioritize sustainability risks and opportunities (according to GPM's PRiSM methodology) to improve the project's value, inclusively analyzing the impacts to the environment, society, and economy, as well as the alignment to the company's strategy. - Interviews, Focus Group, observation and archive study

3.3. Tools

According to the *PMBOK® Guide (2013),* a tool is defined as “something tangible, such as a template or software program, used in performing an activity to produce a product or result”.

The tools used on this FGP are shown in chart 3 below.

Chart 3. Tools (Source: FGP Author)

Objectives	Tools
To develop a Project Charter that can be used as a statement of the scope, objectives, and participants of the project.	Expert judgment; interviews; facilitation; meetings; PMBOK® Guide; Project charter template
To create an effective Scope management plan, that ensures the project works include all elements required to complete the work.	Expert judgment; interviews; facilitation; meetings; PMBOK® Guide; scope management plan template; observations
To create an effective Time management plan for ensuring the timely completion of the project.	Expert judgment; interviews; facilitation; meetings; PMBOK® Guide; schedule management plan template; online & installed software; historical data

To create an effective Cost management plan in order to estimate, manage and control project finances.	Expert judgment; brainstorming; PMBOK® Guide; cost management plan template; MS Excel; historical data
To develop a sustainable Quality management plan to guarantee the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.	Expert judgment; interviews; facilitation; meetings; PMBOK® Guide; quality management plan template; observations; data analysis; inspection plan and template
To create a viable Human Resource management plan to make the most effective use of people involved with the project regarding national and international laws on labor.	Expert judgment; interviews; facilitation; meetings; PMBOK® Guide; human resources management plan template; observations; organizational chart; SWOT analysis; business data analysis; responsibility assignments Matrix
To develop an effective Communication management plan in order to ensure communications on the project are planned and carried out appropriately for the collection, diffusion and storage of information.	Expert judgment; brainstorming; PMBOK® Guide; communication management plan template; communication requirements analysis; communication technology; communication models

To create a sustainable Risk management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.	Expert judgment; brainstorming; PMBOK® Guide; risk management plan template; observations; root cause analysis; risk register; probability and impact matrix
To develop an effective Procurement management plan to acquire the goods and services from outside the performing project team.	Expert judgment; brainstorming; PMBOK® Guide; procurement management plan template; observations; market analysis; source selection analysis; historical data analysis
To develop a viable stakeholder's management plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influence or determine how the team works.	Expert judgment; brainstorming; PMBOK® Guide; stakeholders' management plan template; stakeholders' identification and mapping list; questionnaires
To develop a P5 Impact Analysis to support good decision making by identifying, describing, and evaluating the project's potential impacts on sustainability.	Expert judgment; brainstorming; GPM P5™ Standard for Sustainability in Project Management; P5 impact analysis template; questionnaires

3.4. Assumptions and constraints

According to Usmani (2021), an assumption is what we believe to be true. These are anticipated events or circumstances that are expected during the project's life cycle. Assumptions are made based on the experience or the information available on hand. Assumptions may not end up being true. In fact, they can sometimes be false and may negatively affect the project, adding risk to the project.

Project constraints are limitations imposed on the project, like the budget, schedule, or resources. The PMBOK Guide recognizes six project constraints: scope, quality, schedule, budget, resources, and risk. Out of these six, scope, schedule, and budget are known as the triple constraints.

When a project is planned, some assumptions are made. All the decisions regarding project are based on those assumptions. Assumptions are closely related to the constraints. Every project has some limitations or constraints that must be considered in all planning and managing activities. To analyze the assumptions and constraints, their validity and the threats related to them, assumption and constraint analysis is used. Threats and risks associated with the assumptions take place when the assumptions are incomplete, inconsistent, inaccurate, or unstable. When one of the limiting factors of a constraint is removed, opportunities take place which impact the project.

The summary of assumptions and constraints is shown in chart 4 below.

Chart 4. Assumptions and constraints (Source: FGP Author)

Objectives	Assumptions	Constraints
To develop a Project Charter that can be used as a statement of the scope, objectives, and participants of the project.	All needed information will be available to develop the Project Charter	Client can make mistake when providing information
To create an effective Scope management plan, that ensures the project works include all elements required to complete the work.	Scope will not change. If it should, project will follow a change control approval process	Political turbulence can disturb planning and forecasting
To create an effective Time management plan for ensuring the timely completion of the project.	Schedule will be planned based on real-time information available	Client can ask for schedule changes Political issues or natural disasters can negatively impact the schedule

Objectives	Assumptions	Constraints
To create an effective Cost management plan to estimate, manage and control project finances.	Budget will be created according to accurate market data	Non controlled inflation can impact the budget
To develop a sustainable Quality management plan to guarantee the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.	Quality assurance and control procedures are appropriate to the size, complexity, and nature of the project	Stakeholders do not get involved in the definition of procedures
To create a viable Human Resource management plan to make the most effective use of people involved with the project regarding national and international laws on labor.	Individuals will work 40 hours per week Project Staff assigned to the project will participate on a full-time basis Training funding will be sufficient to prepare project participants for their role Outside contractors will be enrolled for specific tasks	Some of the needed human resources won't be available at the needed time and place.

Objectives	Assumptions	Constraints
To develop an effective Communication management plan in order to ensure communications on the project are planned and carried out appropriately for the collection, diffusion and storage of information.	Both, traditional and modern technological tools will be used to ensure the best possible communication	Poor communication services and facilities can prevent information sharing to be made on time
To create a sustainable Risk management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.	Information received are sufficient to identify and manage the potential risks	Day-to-day socio-political context can create some unexpected risks
To develop an effective Procurement management plan to acquire the goods and services from outside the performing project team.	The materials to complete the project will be readily available to be utilized The best available contractors and suppliers are available and in place Reusable and bio-degradable materials are prioritized	Popular protests and planned blockades of roads can damage the procurement process
To develop a viable Stakeholders' management plan that identifies, manages, engages stakeholders throughout the project and	Identified stakeholders are committed and assume ~~d~~ their	Lack of confidence of some stakeholders in the full

Objectives	Assumptions	Constraints
develops relationships with those people and organizations which are impacted by the project, and which influence or determine how the team works.	responsibilities	completion of the project
To develop a P5 Impact Analysis to support good decision making by identifying, describing, and evaluating the project's potential impacts on sustainability.	Project Sponsor, Project Manager and Project Staff are deeply aware of the sustainability's importance for this project	Lack of availability of accurate and up-to-date information

3.5. Deliverables

A “Deliverable” can be defined as the physical evidence of what has been produced through an activity or as the physical evidence/support of the output that was produced through an activity. Each activity should include one or more deliverables that contribute to the achievement of project outputs. All steps of a single activity do not necessarily need to be listed as separate deliverables but should be aggregated into one deliverable when applicable and relevant (Stegman, 2021).

The summary of deliverables for this FGP is shown in chart 5 below.

Chart 5. Deliverables (Source: FGP Author)

Objectives	**Deliverables**
To develop a Project Charter that can be used as a statement of the scope, objectives, and participants of the project.	Project Charter
To create an effective Scope management plan which ensures the project works include all elements required to complete the work.	Requirements Scope Statement Work Breakdown Structure (WBS) Roles and Responsibilities WBS Dictionary Deliverables Scope Control Scope Acceptance / Validation
To create an effective Time/Schedule management plan for ensuring the timely completion of the project.	List of activities and sequence Activities durations Schedule and Gantt Chart Schedule control
To create an effective Cost management plan to estimate, manage and control project finances.	Costs estimation Budget Costs control

Objectives	Deliverables
To develop a sustainable Quality management plan to guarantee the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.	Quality assurance Quality control Project audits
To create a viable Human Resource management plan to make the most effective use of people involved with the project regarding national and international laws on labor.	Human Resources estimation Human Resources acquisition process Team development Team control
To develop an effective Communication management plan in order to ensure communications on the project are planned and carried out appropriately for the collection and dissemination of storage information.	Roles and responsibilities Media (distribution channel) Information collection sources Meetings' schedule Communication Plan approval
To create a sustainable Risk management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.	Risks identification Risks assessment Risks responses strategies Risks control activities Risks Management Plan approval
To develop an effective Procurement management plan to acquire the goods and services from outside the performing project team.	Procurement scope Contract types Procurement risks management Procurement constraints and assumptions Vendors management Procurement Management Plan approval

Objectives	**Deliverables**
To develop a viable Stakeholders management plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influence or determine how the team works.	Stakeholders' identification Stakeholders' analysis and control Stakeholders' management plan approval
To develop a P5 Impact Analysis to support good decision making by identifying, describing, and evaluating the project's potential impacts on sustainability.	P5 Impact Analysis matrix

4. RESULTS

4.1. Project Charter

4.1.1. Introduction

The Project Charter will serve as an internal document that captures high level planning information (scope, deliverables, assumptions, etc.) about the Project. The Project Manager creates the Project Charter in the Initiation Phase of the Project, in consultation with the Board of Directors of the company. Its purpose is to recognize the existence of the project and to begin the planning process required to accomplish the Project goals. It is not intended to be shared with the customer as a formal contract or legal document.

4.1.2. Project Charter development

Project Name: CONSTRUCTION OF A CHICKEN FARM AT LORY, LOCALITY OF HAITI'S NORTHERN DEPARTMENT.	**Project Number:** LEI-0004-21
Date: February 24th, 2022	**Revision Number:** 0001
PROJECT JUSTIFICATION AND GOALS	
Haitian agriculture faces great challenges preventing a real development of national production. The lack or absence of technical assistance, the inadequacy of agricultural infrastructures, the problems of accessibility of certain areas and poor transport conditions are among the problems faced by producers. However, agriculture represents the most important sector of activity for Haiti given the percentage of the population that depends directly or indirectly on it. Indeed, it should be remembered that according to a general population census conducted by the Haitian Institute of Statistics and Data Processing (IHSI), 65% of the population lives in rural areas and depends on Agriculture. Despite this substantial portion of the population that depends on it, agriculture does not seem to benefit from a sustained attention from decision-makers. The agricultural infrastructures	

necessary for the revival of agricultural production is neither created nor encouraged or supported by the Central Government. The meagre income from agriculture ends up discouraging the farmer who, unable to make his activities profitable, tends to abandon this sector. Haiti is therefore obliged to import products for which it could be self-sufficient or even exporting. In Lory in the north of the country, the situation is not different. Farmers have no technical assistance and agricultural infrastructures are non-existent. Animal production is practiced in a non-modern way by a few people who have the possibility to own some animals. In Lory there is no modern chicken farm. The native hens owned in small numbers by some families are expensive. So, they prefer to sell them in downtown Cap-Haitian to make money for certain primary needs. An exchange with the managers of "LES ENTREPRISES IDEALE" revealed that families consume truly little or almost no meat. There is therefore a clear risk of severe protein deficiency and, consequently, nutritional diseases.

The rationale for this project is that it is designed to contribute to improving the standard of living of the community of Lory and its surroundings. On the one hand, the goal of the project is to make eggs and chicken meat available at a reasonable price and accessible to families. On the other hand, through this project LES ENTREPRISES IDEALE aims to revitalize economic activities in the area. Indeed, the chicken coop will serve as a model of modernity for the producers of the locality who would like to embark on this production and will contribute to intensify the commerce and transport activities of the area. In addition, this project will help to reduce the problems of unavailability and high price of meat and eggs at the local level because livestock products will be sold at prices close to production costs just to ensure the self-financing capacity of the poultry.

OBJECTIVES
General objective: Build a modern *Chicken Farm* capable of producing 5,000 broilers and 15,000 eggs per month. Specific objectives: Build the chicken coop with established norms, standards, and dimensions Build the facilities building with established norms, standards, and dimensions Install hydraulic, electric, and anti-fire systems with established norms, standards, and dimensions Provide work for the local workforce.
DELIVERABLES
• Drafting of the project specifications (project charter) and validation by all stakeholders • Drafting the Scope of Work (SOW) and publication of the call for tenders • Establishment of the technical team for the bid's analysis / creation of the procurement committee • Selection, validation and visit of the construction firm with the best bid proposition after technical and financial evaluations • Acquisition of legal construction authorization • Signature of contract and official launch of the works • Design drawings and documents validation • Construction and systems installation • Monthly progress reports • Efficiency tests of building and facilities • Delivery of the final product (building and facilities)

RISKS
Here are some potential risks that can arise during project's execution: • Legal approval process duration much longer than previewed • Unqualified human resources • Bad quality of tools and materials • Poor weather conditions • Inflation and exchange rate changes • Socio-political problems (strikes, demonstrations...) • Unavailability of certain items / materials in the country.
PROJECT DURATION
This project is expected to be 6 months long (June 2022 – December 2022) with an extension of 2 months for all contingencies.
BUDGET
The overall money being invested is 1,500,000.00 Gourdes (Haitian currency: HTG)
SUCCESS INDICATORS
• Compliance with 90% of delivery times of the enterprise products during the construction period • Delivery of the construction with 100% accordance to the plans and the specifications within the deadlines specified in the specifications • Zero incident (material or human) during the work • Use of 70% reusable material resources during construction • Installation of 100% renewable energy system for the overall operation of the chicken coop.

COMPLETION CRITERIA

The project will be declared complete after all deliverables are conducted on time by the people in charge.

REQUIREMENTS

Stakeholders require that the chicken coop building, facilities, and installed systems shall be:

- built conform to the standards and specifications
- resistant to the most frequent natural disasters in the country (hurricanes, earthquakes)
- equipped with a mixed (solar – wind) renewable energy system
- fully evaluated before accepting the final product as complete.

ASSUMPTIONS & CONSTRAINTS

Assumptions:

- The company, the Project Manager, and the Project Team will provide all support for the achievement of the project
- The construction Firm will consider major natural factors (climate, geology) that can affect the satisfactory progress and sustainability of the work
- The company will provide on-site housing for workers (if needed) to circumvent socio-political issues when appropriate
- The entire amount to be invested is available in the company's bank account
- The company makes it its duty to recruit one of the best and experimented construction firms for this job
- The budget and schedule have been developed with sufficient margins to compensate for large unforeseen situations.

Constraints:

- The company does not foresee an extension of the validated schedule
- No additional money is foreseen
- No changes to prior specifications are considered
- The risks (identified or unidentified)
- The socio-political and security environment of the country in general

STAKEHOLDERS AND ROLES

Direct stakeholders:

Role	**Function**	**Responsibilities**
Project's Owner and Sponsor	Company's Board of Directors	Ensure and consolidate the company interests and the rational use of the money being invested
Project's Supervisor	Project Manager - Consultant	Supervise and ensure compliance of construction with project specifications
Project's Team Members	Construction Firm Staff	Build the chicken coop and related facilities
Technical Assessor	Independent Contractor	Test and evaluate the buildings and the systems installation after the construction phase

Indirect stakeholders:

Function	**Name**	**Role**
Community Engagement Group	Population	Ensure that the project is being executed executing in a safe way for environmental issues
Legal Auditor	Local Authorities	Ensure compliance with legal requirements for construction

PROJECT AUTHORIZATION

Approved by:	Company's Executive Manager	Date
Approved by:	Consultant - Project Manager	Date

4.2. Scope Management Plan

4.2.1. Introduction

The Scope Management Plan provides the scope framework for this chicken coop construction project. Any project communication which pertains to the project's scope should adhere to the Scope Management Plan.

The term "project scope" refers to the sum of all products, services and results that will be provided as the project. The purpose of this scope management plan is to set forth the plans and procedures for defining, developing, monitoring, controlling, changing, implementing, and verifying the project scope. It's the intent of scope management to ensure the completion of all the work required, and only the work required, to complete the project successfully. The Project Manager will assume overall responsibility for project scope management. This will serve as a written reference guide. It describes how the project team will define and develop the project scope, create the Work Breakdown Structure (WBS), validate the scope, verify completion of project deliverables, control the scope baseline, and handle scope changes.

4.2.2. Approach

For this project, scope management is the responsibility of the Project Manager (Consultant). Stakeholders will establish and approve documentation for measuring project scope which includes deliverable quality checklists and work performance measurements. Proposed scope changes may be initiated by the Project Owner & Sponsor, the Project Manager, Stakeholders, or any member of the project team. All change requests will be submitted to provide estimate and impact to schedule and costs. Upon acceptance of the scope change request, the Project Manager will submit the scope change request to the Project Sponsor for acceptance. Upon approval of scope changes by the Project Sponsor, the Project Manager will update all project documents and communicate the scope change to all stakeholders. Based on feedback and input from the Project Manager and any of

the Stakeholders, the Project Sponsor is responsible for the acceptance of the final project deliverables and project scope.

This Scope Management Plan addresses the following processes which will interact with each other and with the processes in the other management plans defined in the Project Management Plan:

- Roles and Responsibilities
- Scope Definition
- Requirements
- Work Breakdown Structure (WBS)
- Deliverables
- Scope Validation
- Scope Control

4.2.3. Roles and Responsibilities

The Project Manager, Sponsor and project team will all play key roles in managing the scope of this project. As such, the Project Sponsor, Project Manager, and team members must be aware of their responsibilities to ensure that work performed on the project is within the established scope throughout the entire duration of the project. Two categories of Stakeholders are registered: Direct and Indirect Stakeholders. The table below defines and details the roles and responsibilities for the scope management of this chicken coop construction project.

Chart 6. Project's roles and responsibilities matrix

Function	Roles	Responsibilities
Company's Board of Directors	Project's Owner and Sponsor: Ensure and consolidate the company's interests and the rational use of the money being invested	• Participate in Scope definition activities. • Approve Scope Management Plan. • Provide high-level scope definition (Project Charter). • Review escalated scope issues and provide resolution directives. • Review major scope change requests and make final decision • Overall decision-making responsibility for Scope Management activities.
Project Manager (Consultant)	Project's Supervisor: Supervise and ensure compliance of construction with project specifications	• Overall responsibility for scope management. • Oversee the development of the Scope Management Plan. • Oversee the scope change management process. • Approve scope change requests within his/her authority. • Escalate scope and change issues.

Function	Roles	Responsibilities
		• Ensure that scope changes are incorporated into appropriate project documents. • May have a role in deliverable verification and acceptance.
Construction Firm Staff	Project's Team Members: Build the chicken coop and related facilities	• Help develop the project scope statement. • Submit deliverables in accordance with project specifications and SOW. • Submit scope change requests. • Review Scope Change requests when assigned. • Provide feedback as and when required. • Participate in team-level scope change reviews.
Independent Contractor	Technical Assessor: Test and evaluate the buildings and the systems installation after the construction phase	• Overall evaluation of the accomplished works during the construction phase • Provide comments and recommendations
Population	Community Engagement Group: Ensure that the project is executing in safe way for environmental issues	• Monitor the impact of project activities on the environment. • Report and ask for change in case of any environmental issues.

Function	Roles		Responsibilities
Independent Auditor	Local Authorities	Ensure compliance with legal requirements for construction	• Provide an ongoing independent review and analysis of project permit. • Verify that the construction is in accordance with country regulations.

4.2.4. Scope definition / statement

The scope for this poultry construction project is defined through a comprehensive requirements collection process. First, a thorough analysis was performed on the company's current products, services, needs, and perspectives based on Board of Directors, employees, and customers feedbacks. From this set of data, the Consultant developed the project requirements documentation, the requirements management plan, and the requirements traceability matrix for what the new chicken coop must accomplish.

The project description and deliverables were developed based on the requirements collection process and input from subject matter experts in poultry's construction. This process of expert judgment provided feedback on the most effective ways to meet the original requirements of constructing the building and facilities from which the company can improve the life level of Lory's community.

This project scope statement provides a detailed description of the project, deliverables, constraints, exclusions, assumptions, and acceptance criteria. The construction includes the design, building, and testing of the structure. The deliverable for this project is a completed chicken coop with the appropriate standards, facilities, and systems installation. This project will be accepted once the building, facilities, and systems have been successfully evaluated and shown to be compatible with the company's current standards, needs, and specifications. This project does not include ongoing operations and maintenance of the poultry. Internal personnel (Project Manager hired by the company as consultant) and external resources (Construction Firm Staff) may be used for this project. Additionally, the project is not to exceed 8 months in duration or 1,500,000.00 HTG in cost.

Assumptions for this project are that support will be provided by the project sponsor, the Project Manager, and the project Team. Moreover: adequate resources are available for the successful completion of this project; the Construction Firm will consider major natural factors (climate, geology) that can

affect the satisfactory progress and sustainability of the work; the company will provide on-site housing for workers (if needed) to circumvent socio-political issues when appropriate, the entire amount to be invested is available in the company's bank account; the company makes it its duty to recruit one of the best and experimented construction firms for this job; the budget and schedule have been developed with sufficient margins to compensate for large unforeseen situations.

4.2.5. Requirements

Identifying the requirements of the project is the most essential step as it helps to identify and estimate the budget of the project. This requirements' identification will help to present the project requirement report to the stakeholder and to prioritize the requirements. We will use the Requirement Traceability matrix (presented in chart 7) as a tool to trace the requirements from the stakeholders at different stages during the project management cycle.

The Requirements Traceability Matrix tool provided in the next section consists of the following attributes. Attribute descriptions are provided to help understand usage.

ID: A unique ID number used to identify each requirement.

Requirement Description (Business Needs, Goals, Objectives, Technical Assumption(s) and/or Customer Need(s): This column is populated with a requirement description linked to the specific requirement classification (functional, non-functional, etc.).

Status (Met Y/N?): This column is populated with status of the requirement development to determine if the requirement has been met or not.

Technical Specification: This column is populated with a description of the technical specification linked to the requirement.

WBS No.: This column is populated with a description of the WBS deliverables linked to the requirement.

Tested In: This column is populated with the test environment the functional requirement has been tested in.

Implemented In: This column is populated with the environment the functional requirement has been implemented in.

Verification Date: This column is populated with the verification date of when the requirement was met.

Additional comments: for any comments, remarks, or suggestions

The project's product will be accepted through the project's formal acceptance processes. These processes are designed to ensure that stakeholders' requirements are understood and satisfied. Stakeholders require that the chicken coop building, facilities, and installed systems shall be built conform to the standards and specifications; resistant to the most frequent natural disasters in the country (hurricanes, earthquakes); equipped with a mixed (solar – wind) renewable energy system; fully evaluated before accepting the final product as complete.

Specific requirements:

- The chicken coop will have to be built on two buildings including the livestock building and the facilities building. The first must have two compartments, one for layers and one for broilers. In the facilities building, there will be a storage space, a shower, toilets, and a space dedicated to composting. The entire chicken coop should be equipped with an anti-fire system with alarm. Each building must have two doors: one for the entrance and one for the exit.
- The chicken coop should preferably be built in the middle of the field and have enough mesh openings to allow good ventilation. It must be oriented East-West in the direction of the prevailing winds and rains. The floor will be in concrete, with straw litter. As for the roof it will be made of sheet metal (with a straw ceiling) with a good slope to evacuate rainwater.
- Cement floors are preferable for all permanent chicken coops. To make a good cement floor, you need a well-packed foundation of embankment, crushed

stone, or gravel, at least 6 inches thick, which is covered with a layer of concrete 3 to 4 inches thick. It is good to put, between the foundation layer and the concrete, a thickness of construction tar paper (overlapping and tarred at the joints) to keep moisture away. The cement floor also requires a cement foundation wall. Bolts approximately six feet apart will be placed in the concrete wall to secure the wood floor.

- Concrete must be mixed in the proportion of one part cement, two and a half parts sand and five parts stone or gravel; to measure, it is good to know that a bag of cement contains about one cubic foot. The floor will be covered with a half-inch finishing layer, consisting of one part cement and two parts sand; this layer must be laid before the base of the concrete has hardened. By finishing the floor with a wooden float, a smooth but not slippery surface is obtained.
- The frame is made of 2X4-inch pieces of wood.
- Use measuring and test equipment that have current certification for calibration and evaluation and maintain records of dates of the tests.
- All constructions must have a renewable energy system (solar - wind) and a fire protection system with alarm.
- The hydraulic system must be integrated into the structure in such a way as to supply the chicken coop and facilities.

Chart 7. Requirement traceability matrix

ID	Requirement Description	*Technical Specification*	Actual Status	*Status met (yes/no)*	Tested In	Implemented In	Verification date	Additional Comments
01	Chicken coop building	- must have two compartments, one for layers and one for broilers - be built in the middle of the field - must be resistant to the most frequent natural disasters - must be oriented East-West - must have two doors: one for the entrance and one for the exit	Not yet started	N.A	N.A	N.A	N.A	
02	Facilities building	- must have a storage space, a shower, toilets, and a space dedicated to composting - must be resistant to the most frequent natural disasters - must have two doors: one for the entrance and one for the exit	Not yet started	N.A	N.A	N.A	N.A	

ID	**Requirement Description**	- ***Technical Specification***	**Actual Status**	***Status met (yes/no)***	**Tested In**	**Implemented In**	**Verification date**	**Additional Comments**
03	Anti-fire system	- must be placed at the entrance doors for each building - must have automatic alarm system incorporated in	Not yet started	N.A	N.A	N.A	N.A	
04	Electrical system	- must be renewable energy system (solar, wind system)	Not yet started	N.A	N.A	N.A	N.A	
05	Plumbing /hydraulic system	- must have electrical pump to feed the system - must be incorporated in the buildings	Not yet started	N.A	N.A	N.A	N.A	
06	Floor	- must be in concrete (at least 6 inches thick, which is covered with a layer of concrete 3 to 4 inches thick) - Concrete must be mixed in the proportion of one part cement, two and a half parts sand and five parts stone or gravel	Not yet started	N.A	N.A	N.A	N.A	

ID	**Requirement Description**	**-*Technical Specification***	**Actual Status**	***Status met (yes/no)***	**Tested In**	**Implemented In**	**Verification date**	**Additional Comments**
07	Roof	- must be made of sheet metal (with a straw ceiling) - must have slope to evacuate rainwater	Not yet started	N.A	N.A	N.A	N.A	
08	Frame	- must be made of 2X4-inch pieces of wood	Not yet started	N.A	N.A	N.A	N.A	
09	Testing and evaluation	- must use certified measuring and testing methods - must use equipment and tools with accurate certification for calibration and evaluation - must maintain test records' dates.	Not yet started	N.A	N.A	N.A	N.A	

N.A.: This matrix will be complete after the starting of the project.

Figure 6. Chicken coop design model

Figure 7. Buildings' construction plan

4.2.6. Work Breakdown Structure (WBS)

For more effective management, the work required to complete the chicken coop will be subdivided into individual work packages not exceeding 40 hours of work per week. This will allow the Project Manager and the Firm to manage the project's scope more effectively as the project team works on the tasks necessary for project completion. The project is broken down into four phases: the initiation & design phase, the construction phase, the evaluation phase, and the closing phase. Each of these phases is then subdivided further down to work packages that are estimated to require no more than 40 hours of work and no less than 4 hours of work weekly.

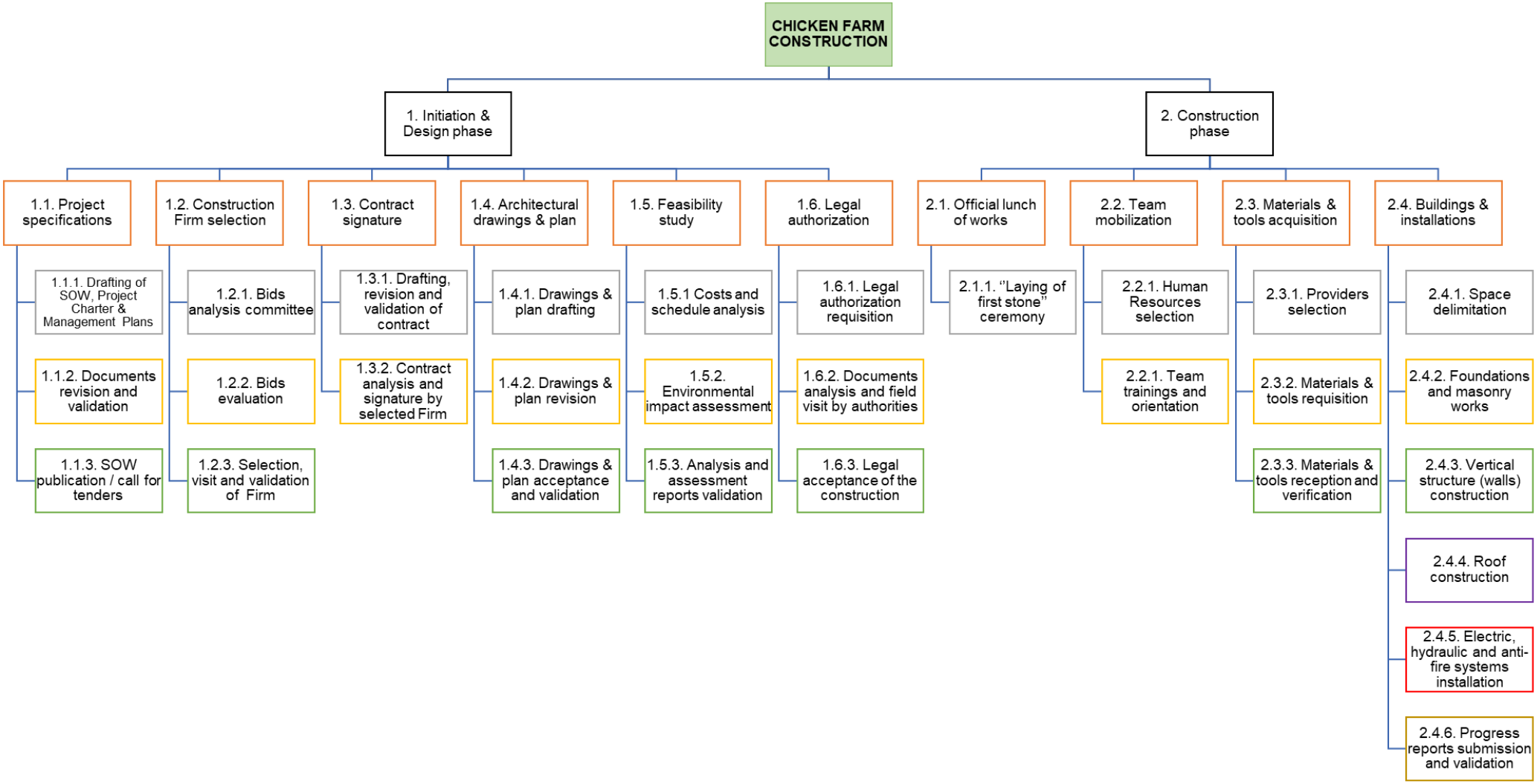

Figure 8. Work Breakdown Structure (WBS – part 1)

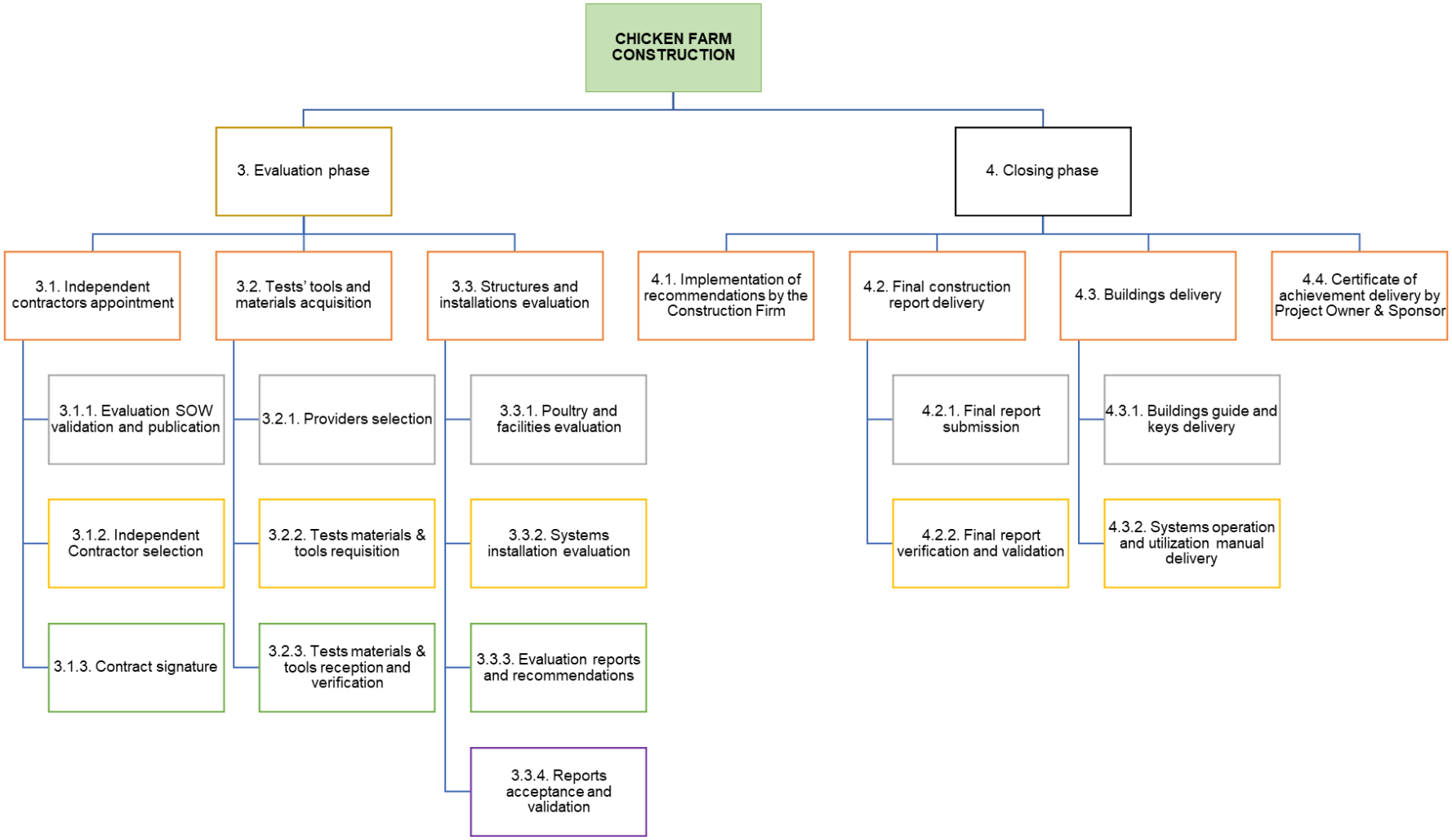

Figure 9. Work Breakdown Structure (WBS – part 2)

4.2.7. WBS dictionary

For this project, the WBS Dictionary will serve as a good communication tool for helping stakeholders demystify and understand the WBS. The second objective of the WBS Dictionary is to help avoid scope creep and gold plating by defining the scope of work. In fact, a clear work definition and transparent work assignment help avoid miscommunication, and team members will know what they are supposed to do. This will help save time and money by avoiding extra work.

This WBS Dictionary complements the WBS, which is a graphical representation of the scope of work. Being graphical, WBS does not explain the scope of work, so WBS Dictionary is prepared to rescue. It adds additional information to WBS to make it complete and increase usability, as described in Chart 7 below.

Chart 8. WBS dictionary development

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
	1.0	**Project Initiation & Design phase**			
1	1.1	Project specifications	Drafting and validation of the project Charter, the Management Plan, and the SOW for the construction	Project Charter / Management Plan / SOW	Board of Directors / Project Manager
2	1.2	Construction Firm selection	Hiring process of a Construction Firm	Call for tenders / Bids analysis committee / Bids analysis report / Selection process report	Board of Directors / Project Manager
3	1.3	Contract signature	Drafting, validation, and signing of the contract for the construction	Signed contract between the company and the selected Construction Firm	Board of Directors / Project Manager / Construction Firm
4	1.4	Architectural drawings & plans	Drafting, submission, and validation of drawings and architectural plans	Display approved drawings and architectural plan in front of the construction site	Board of Directors / Project Manager / Construction Firm

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
5	1.5	Feasibility study	Analysis of project costs, schedule, and environmental impacts	Assessment reports	Board of Directors / Project Manager / Construction Firm
6	1.6	Legal authorization	Complete the process to acquire legal authorization of the construction	Legal authorization signed by authorities	Board of Directors / Project Manager
	2.0	**Project Construction phase**			
7	2.1	Official lunch of works	Plan a ceremony to start with the construction	Realization of the starting ceremony	Board of Directors / Project Manager / Construction Firm
8	2.2	Team mobilization	Workers, technicians, engineers are hired, oriented, and trained by the Construction Firm	Complete team list is submitted to the Project Manager	Construction Firm
9	2.3	Materials & tools acquisition	Procurement process application (as described in Procurement Management Plan)	Needed materials and tools are available on time (procurement reports)	Board of Directors / Project Manager / Construction Firm
10	2.4	Buildings & installations	Construction of the buildings (chicken coop and facilities) / installation of electrical,	Construction and installation progress	Construction Firm / Project Manager

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
			hydraulic, and anti-fire systems in accordance with the project requirements	reports	
	3.0	**Project Evaluation phase**			
11	3.1	Independent Contractors appointment	Hiring process of an Independent Contractor in order to conduct tests and evaluation	SOW / hiring committee / selection report / Signed contract	Board of Directors / Project Manager
12	3.2	Tests tools and materials acquisition	Procurement process to buy tests tools and materials in accordance with the Procurement Management Plan	Needed materials and tools are available on time (procurement reports)	Board of Directors / Project Manager / Independent Contractor
13	3.3	Structures and installations evaluation	Realization of the evaluation	Evaluation reports and recommendations	Independent Contractor
	4.0	**Project Closing phase**			
14	4.1	Implementation of recommendations	Application of all recommendations provided for the buildings and the installations	Records of modifications and progress reports	Construction Firm
15	4.2	Final construction report delivery	Drafting and submission of the final report	Final report delivered to Project Manager	Construction Firm

WBS Level	WBS Code	WBS Element Name	Description of Work	Deliverable(s)	Committed Resources
16	4.3	Building's delivery	Project Owner & Sponsor final inspection and verification	Official ceremony to deliver the keys and manuals to Project Owner, Sponsor, and Manager	Board of Directors / Project Manager / Construction Firm
17	4.4	Delivery of Certificate of Achievement	Drafting and validation of certificate of completion	Delivery of the certificate to the Construction Firm	Board of Directors / Project Manager

4.2.8. Scope verification and control

As the “Chicken coop construction Project” progresses, the Project Manager (as Supervisor) will verify interim project deliverables against the original scope as defined in the scope statement, WBS and WBS Dictionary. Once he verifies that the scope meets the requirements defined in the project plan, the Project Manager and Sponsor will meet for formal acceptance of the deliverable. During this meeting the Project Manager will present the deliverable to the company’s Board of Directors (as Sponsor) for formal acceptance. The Board of Directors will accept the deliverable by signing a project deliverable acceptance document. This will ensure that project work remains within the scope of the project on a consistent basis throughout the life of the project. The following grid will be used as scope verification and control tool.

Scope control is necessary to avoid any unnecessary delays and waste in project planning. It is necessary to examine and control the tasks and procedures of the project at regular time intervals to set the benchmarks and to deliver the project on time. Scope control is also important for maintaining effective communication among the project team members and to run the process smoothly. The Project Manager and the project team will work together to control the scope of this construction. The project team will ensure that they perform only the work described in the WBS dictionary and generate the defined deliverables for each WBS element. The Project Manager will oversee the project team and the progression of the project to ensure that this scope control process is followed, and progress is reported through Project Scope measurements tools.

Chart 9. Project scope measurement tool

Milestone	In Scope	Out Scope	Date	Deliverable

4.2.9. Scope change

If a change to the ‘’Chicken coop construction’’ Project scope is needed, the process for recommending and estimating changes to the scope of the project must be carried out. Any project team member or Sponsor can request changes to the project scope. All change requests must be submitted to the Project Manager in the form of a project change request document. The Project Manager will then review the suggested change to the scope of the project. He will then either reject the change request if it does not apply to the intent of the project or convene a Change Control meeting between the project team and Sponsor to review the change request further and perform an impact assessment of the change. If the change request receives initial approval by the Project Manager and Sponsor, the Project Manager will then formally submit the change request to the Board of Directors.

If the Board approves the scope change, they will then formally accept the change by signing the project change control document. Upon acceptance of the scope change by the Board, the Project Manager will update all project documents and communicate the scope change to all project team members.

4.2.10. Scope Acceptance

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree to the following as the formal Scope Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.3. Time Management Plan

4.3.1. Introduction

The Schedule Management Plan is created to define how the project schedule is managed throughout the project lifecycle. The plan provides guidance and sets expectations for project schedule policies and procedures for planning, developing, managing, executing, and controlling the project schedule. The project schedule is the tool that communicates what work needs to be performed, which resources of the organization will perform the work, and the timeframes in which that work needs to be performed. The project schedule should reflect all the work associated with delivering the project on time.

This Schedule Management Plan purpose is to define the approach the team will use to develop or create the project schedule as well as the tools and techniques that are employed to monitor and control the project schedule based on project team member progress input. This will involve activities such as planning, identification, analysis, documentation, and prioritization of work. Once the schedule baseline is established, changes to the schedule are managed through the project's Change Control process.

The Project Manager reports the project schedule performance information during the normal project status and sponsor meetings. The Project Manager also reports schedule deviations and, if necessary, provides the Project Sponsor with options for getting the project schedule back on track and under control. The Project Sponsor has the authority to approve schedule changes brought forward through the project's Change Control process.

4.3.2. Approach

The project will use the Project Manager's office as the repository for all project schedule related artifacts. The schedule will be developed using the approved Work Breakdown Structure document as its basis. The schedule will be managed by the process defined in this schedule management plan.

This section identifies the list of Schedule Management processes, activities, and tasks that will be defined and implemented to establish and manage the project schedule. The identified Schedule Management processes include:

- Schedule and Gantt Chart development
- Schedule Monitoring
- Schedule Control
- Schedule Reporting

4.3.3. Activities list and definition

Defining activities refers to the process of identifying and documenting the specific actions to be performed to produce the project deliverables. Examine the work breakdown structure (WBS) found in the scope management plan. Typically, deliverables represent the highest or most broadly defined part. Work packages are the next smallest part. They exist within each deliverable. Within each work package, there are work activities which represent the smallest level of decomposition.

This section identifies the person or persons responsible for reviewing the project deliverables, the work packages and then defining the related work activities.

The list of project activities is included in the next chart.

Chart 10. Activities list and description

No.	Work package	Related activities	Assigned to	Detailed Activity Description	Status / Comments
1	Project specifications	- Drafting of SOW, Project Charter & Management Plans - Documents revision and validation - SOW publication / call for tenders	Project Owner & Sponsor and Project Manager	Drafting and validation of the basic documents and the SOW of the project	
2	Construction Firm selection	- Bids analysis committee - Bids evaluation - Selection, visit and validation of Firm	Project Owner & Sponsor and Project Manager	Hiring process for the appointment of a construction firm to implement the project	
3	Contract signature	- Drafting, revision and validation of contract - Contract analysis and signature by selected Firm	Project Owner & Sponsor and Project Manager	Drafting, verification and signature of contract of services between the parties (project Owner & sponsor, Project Manager, and the firm)	
4	Architectural drawings & plans	- Drawings & plan drafting - Drawings & plan revision - Drawings & plan acceptance and validation	Project Owner & Sponsor, Project Manager and Construction Firm	Drafting, revision, validation and public displaying of architectural drawings and plans	
5	Feasibility study	- Costs and schedule analysis - Environmental impact assessment - Analysis and assessment reports validation	Project Owner & Sponsor and Project Manager	Assessment of the practicality of proposed project plan or method (analyzing technical, economic, legal, operational and time feasibility factors)	
6	Legal authorization	- Legal authorization requisition - Documents analysis and field visit by authorities - Legal acceptance of the construction	Local Authorities	Site visit, documents, and plans analysis for legal authorization approval	

No.	Work package	Related activities	Assigned to	Detailed Activity Description	Status / Comments
7	Official lunch of works	-''Laying of first stone'' ceremony	Project Owner & Sponsor, Project Manager and Construction Firm	Official ceremony preparation and realization to start the construction	
8	Team mobilization	-Human Resources selection -Team trainings and orientation	Construction Firm and Project Manager	Hiring process, orientation, trainings, evaluation, and remuneration of Construction Firm Staff	
9	Materials & tools acquisition	-Providers' selection -Materials & tools requisition -Materials & tools reception and verification	Construction Firm	Procurement process for acquiring tools and materials for the construction	
10	Buildings & installations	-Space delimitation -Foundations and masonry work -Vertical structure (walls) construction -Roof construction -Electric, hydraulic, and anti-fire systems installation -Progress reports submission and validation	Construction Firm	Realization of the hard works (buildings setting-up, systems installation…), monitoring and evaluation, progress reporting	
11	Independent Contractor appointment	-Evaluation SOW validation and publication -Independent Contractor selection -Contract signature	Project Sponsor and Project Manager	Hiring process for the appointment of an external auditor for the evaluation of the works	
12	Tests tools and materials acquisition	-Providers' selection -Tests materials & tools requisition -Reception and verification	Independent Engineers & Technicians	Procurement process for the acquisition of tools and materials for the evaluation	

No.	Work package	Related activities	Assigned to	Detailed Activity Description	Status / Comments
13	Structures and installations evaluation	- Poultry and facilities evaluation - Systems installation evaluation - Evaluation reports and recommendations - Reports acceptance and validation	Independent Engineers & Technicians	Structures and systems evaluation, testing and reporting	
14	Implementation of recommendations	- Corrective actions where it is needed	Construction Firm and Project Manager	Correction of the works following Expert evaluation	
15	Final construction report delivery	- Final report submission - Final report verification and validation	Construction Firm	Submission of final report	
16	Buildings' delivery	- Site visit and verification by project Owner & Sponsor	Construction Firm	Delivery of the final buildings, facilities, and systems (keys, plans, operational guides…)	
17	Delivery of Certificate of Achievement	- Buildings' guide and keys delivery - Systems operation and utilization manual delivery	Project Owner & Sponsor and Project Manager	Drafting, validation and delivery of Certificate of achievement to the Construction Firm	

4.3.4. Sequence activities

Sequencing activities is the process of identifying and documenting relationships among the project activities. If the precedence diagramming method (PDM) is used to construct the schedule model, every activity and milestone except the first and the last will be connected to at least one predecessor with a finish-to-start or start-to-start logical relationship and at least one successor with a finish-to-start or finish-to-finish logical relationship. In this document, the work packages and Gantt Chart are used for the sequence since we do not currently have enough details to sequence each activity. In fact, the Construction Firm (after the appointment) with their expertise will have the responsibility to detail the work and make the sequence at the level of the activities using the next chart (Chart 11) as a tool.

Chart 11. Activities attributes

<table>
<tr><td>Activity #</td><td>Activity Name</td><td>Detailed Activity Description</td><td>Assigned To</td><td>Resource Requirements</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>WBS #</td><td>Activity Predecessors</td><td>Notes on Scheduling Predecessor (start-start, start-finish, etc.)</td><td>Dependencies on Predecessor Activity (lead times, lag times)</td><td>Imposed/Firm Date(s)</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Location of Performance</td><td>Activity Successors</td><td>Notes on Scheduling Successor (start-start, start-finish, etc.)</td><td>Dependencies on Successor Activity (lead times, lag times)</td><td>Activity Constraints</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Activity Type</td><td>Activity Assumptions</td><td>Additional Comments</td></tr>
<tr><td colspan="3"></td><td></td><td></td></tr>
</table>

My Team | CHICKEN FARM CONSTRUCTION PROJECT

	Task name	Start date	End date	Duration
		06/01/2022	12/30/2022	153d
1	Project Initiation & Design phase	06/01/2022	06/29/2022	21d
1.1	Project specifications	06/01/2022	06/14/2022	10d
1.2	Construction Firm selection	06/01/2022	06/22/2022	16d
1.3	Contract signature	06/17/2022	06/21/2022	3d
1.4	Architectural drawings & plan	06/22/2022	06/29/2022	6d
1.5	Feasibility study	06/01/2022	06/27/2022	19d
1.6	Legal authorization	06/01/2022	06/29/2022	21d
2	Construction phase	06/30/2022	09/21/2022	60d
2.1	Official lunch of works	06/30/2022	07/04/2022	3d
2.2	Team mobilization	07/04/2022	07/22/2022	15d
2.3	Materials & tools acquisition	07/04/2022	07/29/2022	20d
2.4	Buildings & installations	07/29/2022	09/21/2022	39d
3	Evaluation phase	09/19/2022	11/11/2022	40d
3.1	Independent contractors appointment	09/19/2022	10/12/2022	18d
3.2	Tests' tools and materials acquisition	10/12/2022	10/28/2022	13d
3.3	Structures and installations evaluation	10/28/2022	11/11/2022	11d
4	Closing phase	11/09/2022	12/30/2022	38d
4.1	Implementation of recommendations by the Construction Firm	11/09/2022	11/30/2022	16d
4.2	Final construction report delivery	11/30/2022	12/23/2022	18d
4.3	Buildings delivery	12/26/2022	12/30/2022	5d
4.4	Certificate of achievement delivery by Project Owner & Spo...	12/29/2022	12/30/2022	2d

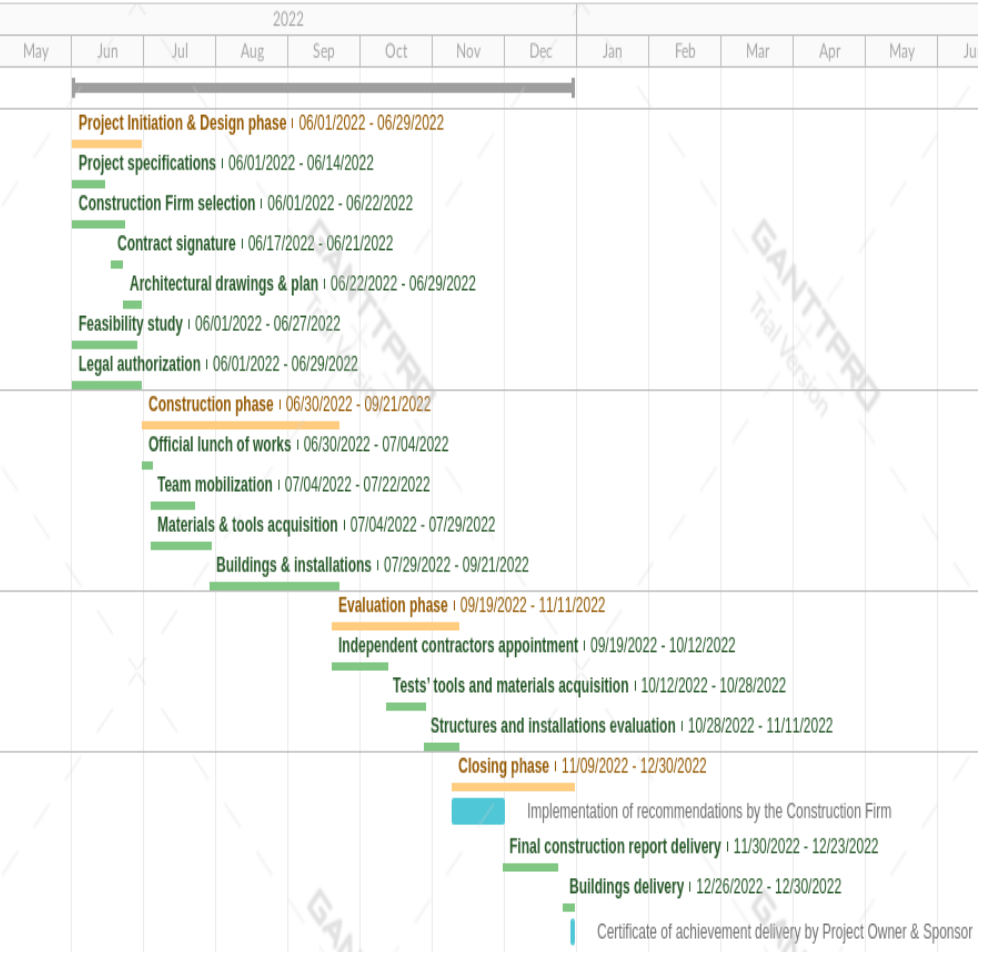

Figure 10. Gantt chart

4.3.5. Schedule Management development

The project schedule will be developed from the approved work breakdown structure (WBS) built as part of the Scope Management planning effort. The Project Manager in consultation with Experts will identify task durations associated with each task. They will also conduct a dependency analysis to determine the order in which the work must occur. Tasks, their associated activities, and durations will be entered into the project schedule software tool with both predecessor and successor tasks assigned at the activity level. Task sizing will be within the project's established work package limits for both effort and duration. Once completed, the Project Manager will examine the schedule to ensure it is technically correct and reasonable. After the schedule is approved, the project will be baselined and put under configuration control. Schedule and Gantt chart are detailed in the following charts.

Project team members report their work time and progress weekly using the project schedule report tool. Team members are trained on how to record time in the schedule report tool. The Project Manager and Construction Firm review the project status and report progress weekly. The project will use Schedule Variance and Schedule Performance Index (SPI) as the basis for measuring schedule performance. In addition, the project will track two additional data points to improve estimation accuracy:

- **Percentage of Tasks on Time** – Measures the percentage of tasks that finish on or ahead of their planned finish date.
- **Percentage of Tasks on Budget (Effort)** – Measures the percentage of tasks that are completed within their allocated time budget.

Chart 12. Schedule planned for the Chicken Farm construction project

Level	Category / Phase	WBS No.	Work packages	Assigned To	Start Date	End Date	Duration (days)	Predecessor
	CHICKEN FARM CONSTRUCTION PROJECT				**June 1, 2022**	**November 27, 2022**	**179**	
	Project Initiation & Design phase	**1.0**			**June 1, 2022**	**June 30, 2022**	**29**	
1		1.1	Project specifications	Project Owner & Sponsor and Project Manager	June 1, 2022	June 10, 2022	9	0
2		1.2	Construction Firm selection	Project Owner & Sponsor and Project Manager	June 1, 2022	June 15, 2022	14	0
3		1.3	Contract signature	Project Owner & Sponsor and Project Manager	June 16, 2022	June 19, 2022	3	1,2
4		1.4	Architectural drawings & plans	Project Owner & Sponsor, Project Manager and Construction Firm	June 19, 2022	July 5, 2022	16	1,2,3
5		1.5	Feasibility study	Project Owner & Sponsor and Project Manager	June 1, 2022	June 30, 2022	29	0
6		1.6	Legal authorization	Local Authorities	June 10, 2022	July 5, 2022	25	1

Level	Category / Phase	WBS No.	Work packages	Assigned To	Start Date	End Date	Duration (days)	Predecessor
	Project Construction phase	**2.0**			**July 6, 2022**	**October 5, 2022**	**91**	
7		2.1	Official lunch of works	Project Owner & Sponsor, Project Manager and Construction Firm	July 6, 2022	July 8, 2022	2	1,2,3,4,5,6
8		2.2	Team mobilization	Construction Firm and Project Manager	July 8, 2022	August 5, 2022	28	7
9		2.3	Materials & tools acquisition	Construction Firm	July 8, 2022	August 5, 2022	28	7
10		2.4	Buildings & installations	Construction Firm	August 6, 2022	October 5, 2022	60	7,8,9
	Project Evaluation phase	**3.0**			**September 10, 2022**	**October 25, 2022**	**45**	
11		3.1	Independent Contractors appointment	Project Sponsor and Project Manager	September 10, 2022	September 28, 2022	18	10
12		3.2	Tests tools and materials acquisition	Independent Engineers & Technicians	September 29, 2022	October 4, 2022	5	11
13		3.3	Structures and installations evaluation	Independent Engineers & Technicians	October 5, 2022	October 25, 2022	20	11,12

Level	Category / Phase	WBS No.	Work packages	Assigned To	Start Date	End Date	Duration (days)	Predecessor
	Project Closing phase	**4.0**			**October 26, 2022**	**November 27, 2022**	**32**	
14		4.1	Implementation of recommendations	Construction Firm and Project Manager	October 26, 2022	November 12, 2022	17	13
15		4.2	Final construction report delivery	Construction Firm	November 13, 2022	November 18, 2022	5	10,14
16		4.3	Buildings' delivery	Construction Firm	November 18, 2022	November 21, 2022	3	15
17		4.4	Delivery of Certificate of Achievement	Project Owner & Sponsor and Project Manager	November 22, 2022	November 27, 2022	5	16

4.3.6. Schedule assumptions, issues, or risks

While planning and managing the project schedule, it's possible that assumptions will be made, issues will be encountered, or risks may be identified. The tool to manage everything regarding the project schedule is documented here then transferred to the Risk management Plan for further management.

Chart 13. Assumptions, issues or risks definition and description

Assumptions / issues / risks description	Transferred to Risk Management Plan
All the contracts will be ready on time	
Major natural factors (natural disasters that can affect the satisfactory progress and sustainability of the work)	
Recruitment process (selection of one of the best and experimented construction firms for this job)	
Socio-political and security environment	
Labor shortages & productivity issues (not having enough and qualified workers available)	
Health & Safety Hazards (Major accidents can result in serious injuries or fatalities to your employees)	
Defaulting Contractors (that isn't meeting its contractual obligations)	
Change Orders (addendum or amendment to the original construction contract or the scope of work)	
Unexpected increases in material costs	
Damage or theft to equipment and tools	
Availability of building materials	
Poor project management	

4.3.7. Schedule control

The Project Manager and the Construction Firm will review and update the project schedule every Friday (weekly). On these dates, members of the project team will provide the project manager with actual performance and completion information. The project manager will compare the actual information to the schedule baseline and calculate the completion percentages and any variances. The project manager will distribute the actual schedule information according to the terms set forth in the communication management plan.

Where necessary, the project manager will meet with the project team members to determine the cause of any variance and discuss appropriate corrective measures. Where schedule changes are necessary, the project manager will submit a change request in accordance with the change management plan.

4.3.8. Schedule validation

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.4. Cost Management Plan

4.4.1. Introduction

The purpose of this Cost Management Plan is to define the methodology by which costs associated with “Chicken Farm construction Project” will be managed throughout the project lifecycle. It sets the format and standards by which the project costs are measured, reported, and controlled. The Project Manager will be responsible for managing and reporting on the project’s cost throughout the duration of the project. During the periodical project status meeting, the Project Manager will meet with the Boards of Directors to present and review the project’s cost performance for the preceding period. Performance will be measured using earned value. The Project Manager is responsible for accounting for cost deviations and presenting the Project Sponsor with options for getting the project back on budget. The Project Sponsor has the authority to make changes to the project to bring it back within budget. To complete this project successfully, all key project members and stakeholders must adhere to and work within this Cost Management Plan and the overall project plan it supports.

4.4.2. Approach

The Cost Management Plan approach for this “Chicken Farm Construction” requires that the project resources assist in establishing and managing the total cost of ownership of the project. This includes establishing the estimated budget and measuring actual spending against the planned budget.

The Cost Management Plan establishes the activities and criteria for planning, structuring, and controlling project costs. Cost estimating and cost controls are the most important evaluation and control items for this project. Actual costs and cost variances must be reported regularly to Project Manager and project sponsors. Any cost change over five percent requires the Board of Directors approval.

The Management will create the cost baseline and the Cost Management Plan. Beginning with the preliminary cost estimates identified in the Initiation phase, the

Project Manager will develop updated cost estimates to perform the work included in the revised schedule.

Costs for this project will be managed at the second level of the Work Breakdown Structure (WBS). Control Accounts (CA) will be created at this level to track costs. Earned Value calculations for the CA's will measure and manage the financial performance of the project. Although activity cost estimates are detailed in the work packages, the level of accuracy for cost management is at the second level of the WBS. Credit for work will be assigned at the work package level. Work started on work packages will grant that work package with 75% credit; whereas the remaining 25% is credited upon completion of all work defined in that work package.

Cost variances of +/- 0.1 in the cost and schedule performance indexes will change the status of the cost to cautionary; as such, those values will be changed to yellow in the project status reports. Cost variances of +/- 0.2 in the cost and schedule performance indexes will change the status of the cost to an alert stage; as such, those values will be changed to red in the project status reports. This will require corrective action from the Project Manager to bring the cost and/or schedule performance indexes below the alert level. Corrective actions will require a project change request and must be approved by the Project Sponsor before they can become within the scope of the project.

4.4.3. Costs performance measurement

This section defines how project costs will be measured. Cost performance will be measured at two levels:

• Overall total cost of ownership: To track and budget spending of all project cost factors

• Earned Value Management: To measure and control costs at a detailed work level

Cost control is the process of monitoring the status of project spending, updating the project budget, and managing changes to the budget baseline. Updating the budget involves recording bi-monthly the actual costs spent to date, as well as

tracking those costs which have been approved but not yet realized. Any adjustments to the baselined budget to address any overages in spending should only occur through an integrated Change Control Process.

The approach for cost performance measurement is to use Earned Value Management (EVM) for measuring and controlling the project costs. The Project Manager and/or project resources will review the following earned value measurements:

- Schedule Variance
- Cost Variance
- Schedule Performance Index
- Cost Performance Index
- To Complete Cost Performance Index
- Estimated Actual Cost at Completion

Chart 14. Estimate costs of the Chicken Farm Construction

Level	Category / Phase	WBS No.	Work packages	Assigned To	Costs	Budget percentage
	CHICKEN FARM CONSTRUCTION PROJECT				**HTG 1,500,000.00**	**100%**
	Project Initiation & Design phase	**1.0**	**Project Initiation & Design phase**		**HTG 326,625.00**	**22%**
1		1.1	Project specifications	Project Owner & Sponsor and Project Manager	HTG 37,500.00	3%
2		1.2	Construction Firm selection	Project Owner & Sponsor and Project Manager	HTG 60,000.00	4%
3		1.3	Contract signature	Project Owner & Sponsor and Project Manager	HTG 1,875.00	0%
4		1.4	Architectural drawings & plans	Project Owner & Sponsor, Project Manager and Construction Firm	HTG 93,750.00	6%
5		1.5	Feasibility study	Project Owner & Sponsor and Project Manager	HTG 112,500.00	8%
6		1.6	Legal authorization	Local Authorities	HTG 21,000.00	1%

Level	Category / Phase	WBS No.	Work packages	Assigned To	Costs	Budget percentage
	Project Construction phase	**2.0**	**Project Construction phase**		**HTG 936,750.00**	**62%**
7		2.1	Official lunch of works	Project Owner & Sponsor, Project Manager and Construction Firm	HTG 90,000.00	6%
8		2.2	Team mobilization	Construction Firm and Project Manager	HTG 262,500.00	18%
9		2.3	Materials & tools acquisition	Construction Firm	HTG 341,250.00	23%
10		2.4	Buildings & installations	Construction Firm	HTG 243,000.00	16%
	Project Evaluation phase	**3.0**	**Project Evaluation phase**		**HTG 123,750.00**	**8%**
11		3.1	Independent Contractors appointment	Project Sponsor and Project Manager	HTG 7,500.00	1%
12		3.2	Tests tools and materials acquisition	Independent Engineers & Technicians	HTG 67,500.00	5%
13		3.3	Structures and installations evaluation	Independent Engineers & Technicians	HTG 48,750.00	3%

Level	Category / Phase	WBS No.	Work packages	Assigned To	Costs	Budget percentage
	Project Closing phase	**4.0**	**Project Closing phase**		**HTG 112,875.00**	**8%**
14		4.1	Implementation of recommendations	Construction Firm and Project Manager	HTG 75,000.00	5%
15		4.2	Final construction report delivery	Construction Firm	HTG 9,375.00	1%
16		4.3	Buildings' delivery	Construction Firm	HTG 18,750.00	1%
17		4.4	Delivery of Certificate of Achievement	Project Owner & Sponsor and Project Manager	HTG 9,750.00	1%

N.B. For each task, the costs have a margin of 10% ahead of the real costs. It is done in this manner because we do not have a specific line for contingency, so we include it in each task.

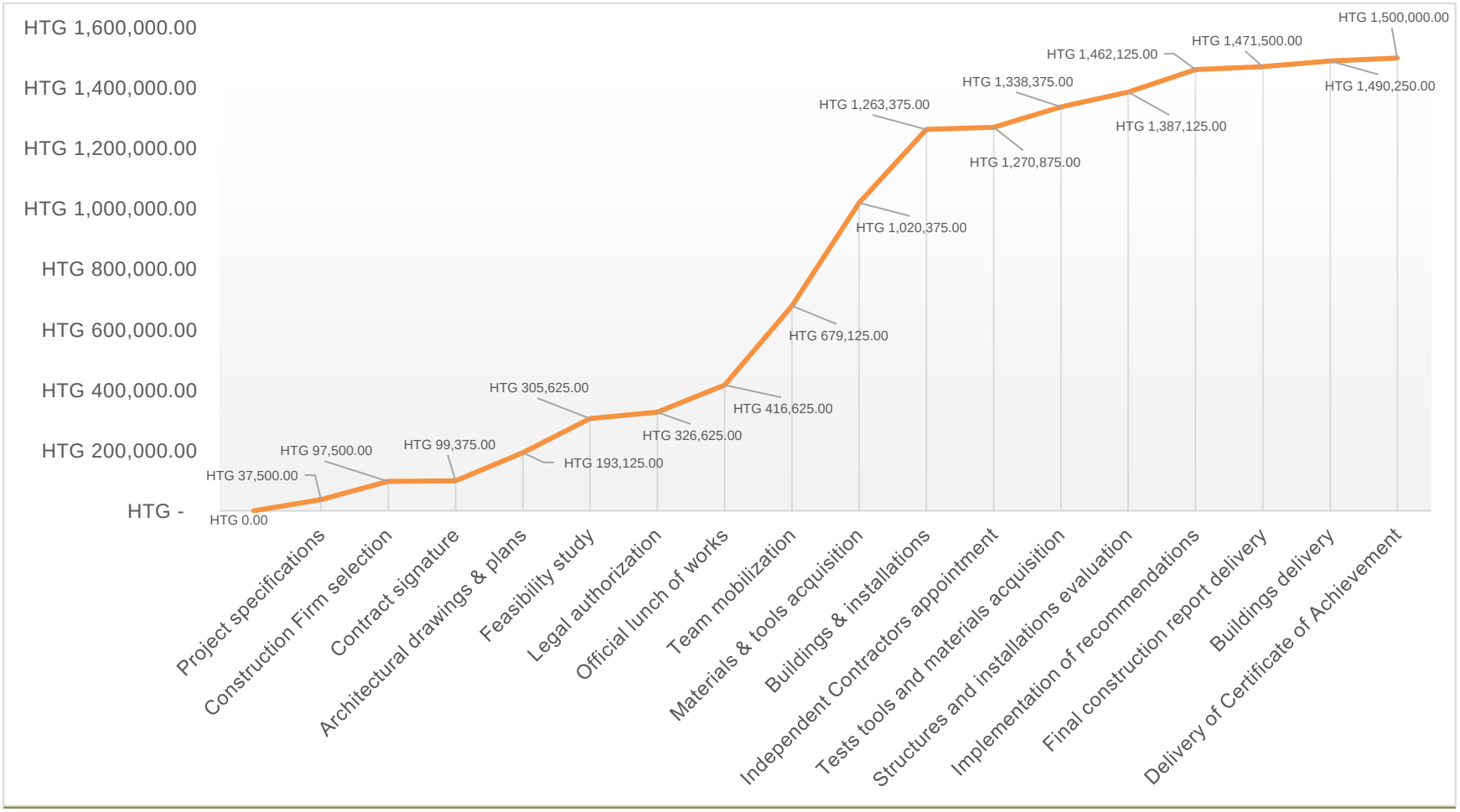

Figure 11. Curve “S” of accumulated cash flow (planned value)

4.4.4. Costs control

Reporting for cost management will be included in the weekly project status report. The report will include a section labeled, “Cost Management”. This section will contain the Earned Value Metrics identified in the previous section. All cost variances outside of the thresholds identified in this Cost Management Plan will be reported ~~on~~ including any planned corrective actions. Change Requests which are triggered based upon project cost overruns will be identified and tracked in this report.

The cost change control process will generally follow the established project change request process. Approvals for project budget/cost changes must be approved by the Board of Directors (Project Sponsor). A summarization of the change control process is as follows:

- Identify and assess the change.
- Complete a Change Request Form and submit the form, along with required supporting documentation, to the Project Manager.
- The Project Manager will review the change request and may request additional documentation prior to review with the Project Sponsor.
- Using the Change Request Form, the Project Manager will mark the change as approved, in which case both the Project Manager and Project Sponsor will sign off on the change request and adjust other project planning factors as necessary; or denied, in which case both the Project Manager and Project Sponsor will mark the change as denied in the change control and sign off on the change request. The Project Manager will notify the requestor of the status and reason for denial.
- The project manager will document the change request outcome as necessary (update WBS, schedule and budget documentation if impacted). If there is a change in the total cost of ownership or in how the estimated costs will be incurred over the remaining life of the project, a new project budget baseline, and time-phased budget baseline should be set (i.e., these are “re-baselined”).

4.4.5. Costs acceptance

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.5. Quality Management Plan

4.5.1. Introduction

The purpose of this Quality Management Plan is to confirm that a quality product is delivered that conforms to contract requirements and meets the needs of the Project Owner. It is to provide a single point of reference on the quality assurance processes that will be governed during the project. The process encompasses quality requirements identification, planning, implementation, and execution of the plan. This document is based on the terms and conditions established in the project specifications and requirements.

The deliverable at hand defines the project organization, procedures, roles, and responsibilities related to the quality control and quality assurance activities that will be carried out. It describes how the project will execute its day-to-day activities from a quality perspective, and ensures that standards, processes, and procedures are defined, and their execution is continuously monitored, corrected when necessary and improved. The use of the present guidelines can ensure better collaboration among the Stakeholders.

Once the plan is operational, the Project Manager leverages the plan to assess, measures, monitors, and continually improves the plan. The plan is developed and approved to confirm major deliverable/milestone acceptance criteria and manage approved project processes through the duration of the “Chicken Farm construction” project. The Project Manager will be responsible for:

• Tracking, assessing, and ensuring all deliverables are in alignment with the sponsor’s expectations for quality.

• Inspecting and commenting on all draft and final project document deliverables for traceability, correctness, and fidelity to the project requirements backlog.

4.5.2. Approach

To be successful, this Quality Management Plan outlines the methods that will be implemented to support all aspects of quality management within a project; at minimum, these aspects include Quality Assurance, Quality Control and Process

Audits. Conjointly, the Project Manager and the Construction Firm will develop specific tools for this matter.

Achieving quality in construction is a time-consuming and intensive process, which everyone is responsible for. It's about constantly checking decisions and work meet the quality assurance standards set. Here are the aspects that this quality assurance will cover:

- *Clear definitions of 'quality':* orientation and awareness sessions will be realized for everyone working on the project to clearly understand what is meant by 'quality', what the expectations are for this "Chicken Farm construction" and explain them to all Stakeholders (approved documents will be used for the details).
- *Planning, design, and development of plans:* Designers and the Project Manager must conduct thorough assessments of plans, check for clashes, and avoid cutting corners. This will help in identifying and fixing issues as soon as possible, so there are less chances of delays occurring during the building process.
- *Material purchasing:* It will be vital to ensure that all materials and equipment purchased meet the standards. Buying cheaper, lower-quality materials may save money in the short term but may cause problems on the long run. Quality assurance when buying also involves verifying whether the suppliers are truly capable of meeting the demands.
- *Continuous interaction during the building process:* All project participants must be able to communicate, discuss issues and verify progress. Quality in construction relies on the site manager constantly monitoring the works, ensuring pre-agreed definitions of quality.
- *Handover and snagging:* Once the structure itself is up, quality assurance also comes into play at the snagging and handover stage. This is about conducting checks to ensure the as-built structure meets the expected quality standards. For this reason, before the closing of the project, the Board of Directors and the Project Manager previewed to hire an

Independent Contractor to evaluate the works done by the Construction Firm.

4.5.3. Quality Assurance

Quality Assurance focuses on the processes used to create the project deliverables. This includes processes like process checklists, project audits, methodology and standards development. It focuses on the prevention of quality problems through planned and systematic activities performed throughout the project life cycle, including documentation. While the Construction Firm and the Project Manager are responsible for establishing a good quality management system and assessing its adequacy, the project team (workers, engineers…) are responsible for implementing it. Everyone on the team involved in developing the product is responsible for quality assurance. Quality Assurance will be used as a method of avoiding potential mistakes in the construction project by creating 'rules' about minimum quality, while ensuring all decisions meet these standards. This Quality Assurance defines a method for determining the how and when for construction standards and a methodology that enables the team to evaluate and identify construction standards that best satisfy: building specifications, legal provisions, construction safety necessities, customer quality expectations. This section will address some ways that are expected to be used for the project's Quality Assurance.

Chart 15. Quality Assurance matrix

Methods / Ways	Description	Additional comments
Meetings (between Company and Construction Firm)	-the client must make the architect aware of the reason of the building, the function, location, rooms, space etc. -it is necessary for the architect to assist or explain to the client some important information information's in the project.	
Materials (must critically be taken into consideration)	-material to use in order to get a better construction and as a matter	

	of fact its life span (e.g. materials to use in the walls around the bathroom have to be water proofed...)	
Methods / Ways	**Description**	**Additional comments**
Budget	-At each milestone design a budget must be evaluated against the master project budget for conformance with the established program price. -Corrective action, if required, should be reviewed at each stage to keep the project on target.	
Constant supervision and verification	-Step by step inspection and supervision should be done in order to ensure application of the adopted processes, standards, requirements…	

4.5.4. Quality control

The purpose of Quality Control (QC) is to find and eliminate sources of quality non-conformities using tools & equipment to ensure the Project Owner's expectations for the quality of the project deliverables are systematically and continually met. Quality Control activities or techniques are used to achieve and maintain the construction quality. QC is the responsibility of the team that tests the product for defects. Testing early and often is a basic quality control strategy. For this project, the followings are the QC activities previewed:

- *Continuous monitoring, evaluation and reporting* by the Project Manager, the Construction Firm and Staff while the construction is ongoing (construction phase).
- *General evaluation of the works* (evaluation phase) by an Independent Contractor right after the construction phase.

- *It's mandatory for the Construction Firm to implement the recommendations* made by the Independent Contractor.

The Construction Firm will review suggested corrective actions for each identified process or work product nonconformity and will work with the Project Manager to ensure a corrective action has been established that will address the identified process nonconformities. Progress made against any corrective actions and corrective action priority are placed on the program schedule and reported via the regular project status meetings. If the Construction Firm disagrees with any of the corrective actions or the Project Manager disagrees with proposed modifications to the actions or the problem affects scope and schedule, they may escalate the disagreement to the Board of Directors to make a final decision.

Chart 16. Quality control Log sheet

DATE	ACTIVITY / MATERIAL / EQUIPMENT / TOOL	SPECIFICATION & CHARACTERISTIC REQUIRED	SPECIFICATION & CHARACTERISTIC ACTUAL	ACCEPTABLE (YES or NO)	COMMENTS / DECISION / CORRECTIVE ACTION
…	Building floor	well-packed foundation of embankment, crushed stone, or gravel, at least 6 inches thick, which is covered with a layer of concrete 3 to 4 inches thick	foundation is covered with a layer of concrete 2.76 inches	NO	Layer of concrete should be up to 3 inches at least
…	…	…	…	…	…

4.5.5. Project Audits

To ensure a well-managed and controlled project, a light-weight audit process will be applied to project activities and tasks. The project audit strategy will be to implement audit activities that are simple, systematic, and iterative. The audit plan will examine and analyze the project team's execution of project processes to identify any issues, concerns, challenges, and/or opportunities and report them to the Project Manager to address. The goal of the audit process is to maximize the

success of this project. The process is intended to complete the following general objectives:

• *Ensure that project decision making is effective* (every decision made produces a desire outcome).

• *Project activities are adequately performed and managed*.

• *Project governance and risk management meet business requirements*.

Chart 17. Project Audits Log sheet

Date	Reviewer Name	Activity reviewed	Issues	Comments/Resolution

4.5.6. Quality management approval

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

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4.6. Resources Management Plan

4.6.1. Introduction

The resource management plan is the section of the project management plan that supports guidance on how project resources should be categorized, allocated, managed, and released. It is divided between the Human Resources Management Plan and Physical Resources Management Plan.

4.6.2. Human Resources

This Human Resources and Staff Management Plan describes the processes and procedures used to staff the “Chicken Farm Construction Project”. This plan supplements the overall Project Management Plan (PMP). Its scope includes project roles and responsibilities, project organization, HR policy, staffing estimation, staff management processes, staff skill sets, staff acquisition, staff development, performance monitoring, and others as project needs dictate. The Human Resources and Staff Management Plan is intended to be a living document, reviewed, and updated as needed.

The purpose of the Human Resources and Staff Management Plan is to document the processes to identify, acquire, develop, and manage the human resources necessary to successfully complete the project. The plan describes the planning and acquisition of both state and contracted staff, documents the responsibilities assigned to each staff person, and outlines onboarding, and training activities needed to ensure the correct resources are available at the right time for the right task.

4.6.3. Approach

This section describes the general approach to managing staff on the project. While developing the Human Resource planning approach, the Project Manager (PM) has reviewed the Responsibility Matrix to identify or update participants who should be consulted or informed during the process, and to identify who approves the Human Resources Management plan. The Project Manager should also review

the Project Approval Lifecycle of deliverables to ensure consistency with staffing strategy that has already been determined. Other project artifacts and resources that will influence Human Resources planning activities, such as current organizational charts, Human Resources policies, identified project risks, documented constraints, the Project Charter, the Project Scope Statement, the Work Breakdown Structure (WBS), and known project milestones or timeframes, have been gathered, and used as inputs to the planning process.

Once the background information is collected, the Project Manager will define the necessary planning sessions and identify key participants required to adequately prepare the Human Resource and Staff Management Plan.

4.6.4. Roles and responsibilities

The roles and responsibilities for the “Chicken Farm Construction Project” are essential to project success. All team members must clearly understand their roles and responsibilities to successfully perform their portion of the project. For this project, the following chart establishes the project team roles and responsibilities.

Chart 18. Human Resources roles and responsibilities

Function	Name	Role	Responsibility
Project's Supervisor	Project Manager (Consultant)	Supervise and ensure compliance of construction with project specifications	• Overall responsibility for scope management. • Oversee the development of the Scope, Schedule, and Costs Management Plan. • Oversee the scope change management process. • Approve change requests within his/her authority. • Escalate scope and change issues. • Ensure that changes are incorporated into appropriate project documents. • May have a role in deliverables verification and acceptance.
Project's Team Members	Construction Firm Staff	Build the chicken coop and related facilities	• Help develop the project scope statement. • Submit deliverables in accordance with project specifications and SOW. • Submit change requests. • Review Change requests when assigned. • Provide feedback as and when required. • Participate in team-level scope change reviews.

Function	Name	Role	Responsibility
Project's Technical Assessor	Independent Contractor	Test and evaluate the buildings and the systems installation after the construction phase	• Overall evaluation of the accomplished works during the construction phase • Provide comments and recommendations

N.B. Construction Firm Staff is a team of highly skilled technicians hired by the Construction Firm.

4.6.5. Staffing estimates

This section establishes the project's estimated staffing requirements by project phase. It will estimate when each resource is to start on the project, along with the estimated work duration based on the WBS. During initial planning stages, staffing estimates is just that. However, staffing estimates should become more accurate as additional information becomes available.

Accurate staffing estimates depend on completed activity resource requirements. These requirements identify types and quantities of resources required for each activity in a project work package during each phase.

The Construction Firm is responsible for hiring the necessary team (Staff) for the realization of the project. For this, the Firm is free to choose between its internal or external recruitment process according to the skills available. This team will consist of:

- **1 Engineer (Site Coordinator**): he/she plays a leading role in the implementation of the project. He's the main interface of the Project Manager. He leads the teams, controls, coordinates, and plans the work. Associated with the preparatory phases as well as the financial management, he also ensures the organization of the site.
- **1 Architect (Assistant Site Coordinator**): he/she is responsible for designing the architectural project which defines -by plans and written documents- the location of the buildings, their composition, their organization, and the expression of their volume as well as the choice of materials and colors. He plans orders and purchases and sends them to the engineer who approves them for execution.
- **1 Foreman**: he supervises the team and establishes the schedules. He reminds daily the safety instructions for risky tasks, planning and organizing the work safely, ensuring that safety materials and equipment are available and in good condition. He must inform employees of the hazards and risks in their workplace at safety meetings. It ensures that the worker is aware of the safe

use of the equipment. During his rounds of supervision on the site, he ensures that the safety instructions are respected. At all times, it must intervene as soon as a worker's dangerous driving occurs.

- **7 Masons**: they are responsible for implementing horizontal structures (foundations, floors), assemble and position elements; manufacture and lay formwork; prepare concrete and other mortars, masonry walls by assembling materials (bricks, blocks) …
- **3 Electricians**: from the study of specifications, plans and diagrams of the electrical installation, the site electricians identify in the field a route of lines and the location of equipment (sockets, switches, meters). They then ensure the smooth running of the electrical duties (laying of cables, electrical panels, and connection) then supervise the testing and verify the quality of the installation.
- **2 Plumbers**: they must find the best solution to connect the water supply from the city network or the company's internal network (well/source and reservoir). This connection must allow the availability of water for the operation of the chicken coop (beverage of chickens, cleaning) and facilities (shower, sanitary appliances). They are also responsible for setting up the water drainage system for the buildings.
- **4 Carpenters**: they prepare ~~in~~ the workshop and implement~~s~~ on the site the woodwork and materials derived from wood for the construction and the installation of the roof, doors, and windows.
- **4 Metal joiners:** Specialized in metalworking, the metal carpenter applies the processes of manufacturing, bolting, welding, and assembling structural components such as beams, columns, and beams, as well as architectural elements such as stairs, wire mesh, etc. He is responsible for affixing all the ironwork, choosing the metals and the machines appropriate to the work. It assembles elements by welding or bolting to scaffolding, install lifting equipment, place and fix metal rods and mesh in concrete formwork.

The following RACI chart shows the relationship between project tasks and team members. Any proposed changes to project responsibilities must be reviewed and approved by the Project Manager. Changes will be proposed in accordance with

the project's change control process. As changes are made all project documents will be updated and redistributed accordingly.

The codes for the chart are as follows:
R – Responsible for completing the work
A – Accountable for ensuring task completion/sign off
C – Consulted before any decisions are made
I – Informed of when an action/decision has been made
Blank case – non applicable

Chart 19. RACI matrix

HR / Work package	Project Manager	Engineer	Architect	Foreman	Mason	Electrician	Plumber	Carpenter	Metal Joiner	Independent Contractor
Project specifications	R									
Construction Firm selection	R	I								
Contract signature	A	R								
Architectural drawings & plans	A	C	R							
Feasibility study	R	C	C							
Legal authorization	A	I								
Official launch of works	R	I	I							
Team mobilization	A	R	C	I	I	I	I	I	I	
Materials & tools acquisition	A	C	R	I	I	I	I	I	I	
Buildings & installations	A	C	C	R - I	R - I	R - I	R - I	R - I	R - I	
Independent Contractor appointment	R	I								I

	Project Manager	Engineer	Architect	Foreman	Mason	Electrician	Plumber	Carpenter	Metal Joiner	Independent Contractor
Tests tools and materials acquisition	A									R
Structures and installations evaluation	A	I								R
Implementation of recommendations	A	C	C	R - I	R - I	R - I	R - I	R - I	R - I	
Final construction report delivery	A	R	C							
Buildings' delivery	A	R	C							
Delivery of Certificate of Achievement	R	I								

4.6.6. Activities' resources and duration estimate

Estimating activity resources involves estimating the type and quantities of material, human resources, equipment, or supplies required to perform each activity. Estimating activity durations is the process of estimating the number of work periods needed to complete individual activities with the estimated resources.

Both are the responsibility of the Construction Firm (for more accurate estimation) since they get a lot of experiences and expertise in those types of work. Nevertheless, the Project Manager use analogous technique for the estimation of the human resources and the activities duration for the drafting of the Project Management Plan. So, the estimation can be changed when the Firm will be in charge.

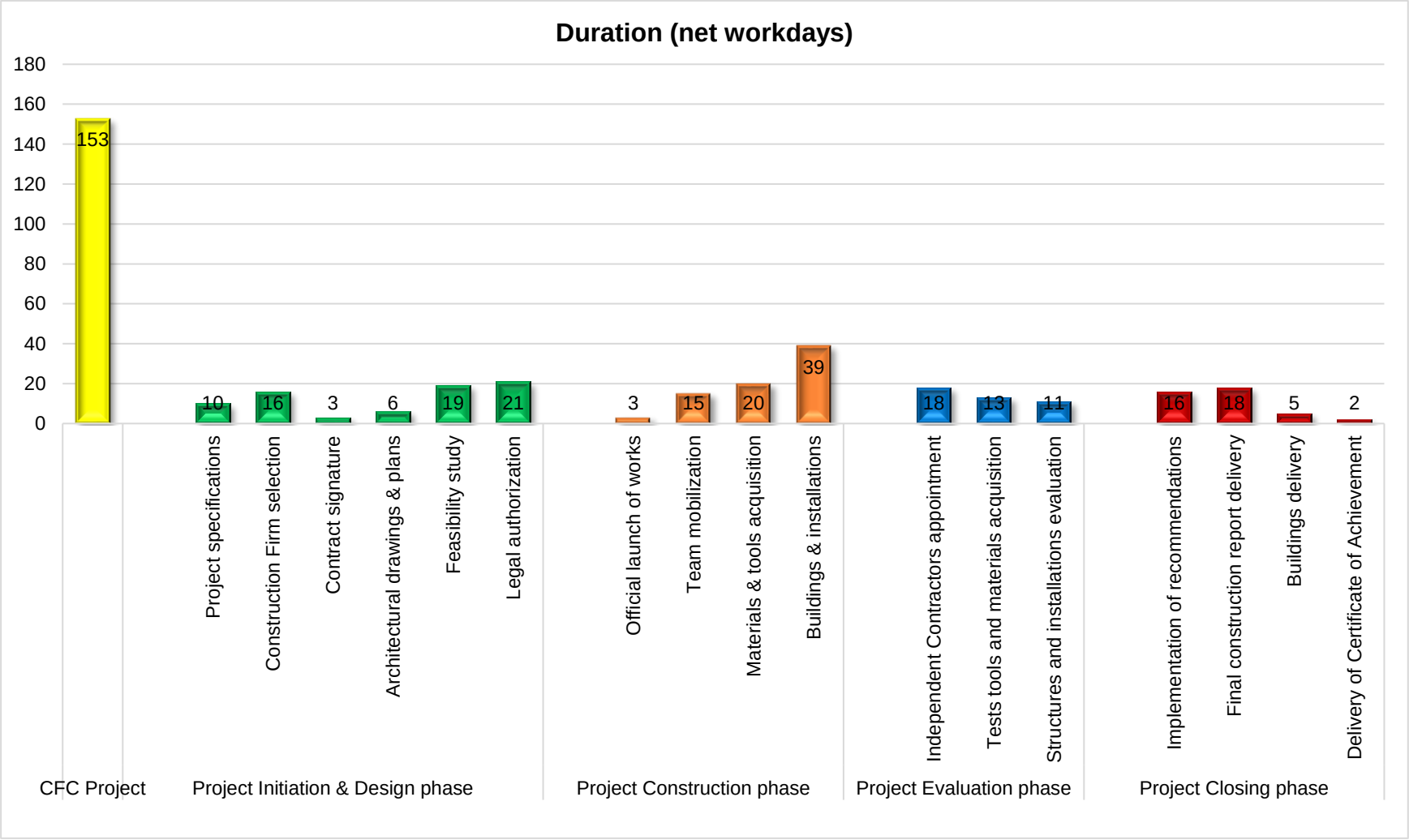
Chart 20. Activities' resources and duration

WBS Number		Work package name / Title	Resources	Planned start date	Planned end date	Duration (days)
		CHICKEN FARM CONSTRUCTION PROJECT				153
1	**Project Initiation & Design phase**			**6/1/2022**	**6/29/2022**	**21**
1.1	**Project specifications**			**6/1/2022**	**6/14/2022**	**10**
1.1.1	Drafting of SOW, Project Charter & Management Plans		Project Manager	6/1/2022	6/3/2022	3
1.1.2	Documents revision and validation		Project Sponsor	6/6/2022	6/8/2022	3
1.1.3	SOW publication / call for tenders		Project Manager	6/8/2022	6/14/2022	5
1.2	**Construction Firm selection**			**6/1/2022**	**6/22/2022**	**16**
1.2.1	Bids analysis committee		Project Manager	6/1/2022	6/3/2022	3
1.2.2	Bids evaluation		Project Manager	6/15/2022	6/17/2022	3
1.2.3	Selection, visit and validation of Firm		Project Manager	6/20/2022	6/22/2022	3
1.3	**Contract signature**			**6/17/2022**	**6/21/2022**	**3**
1.3.1	Drafting, revision and validation of contract		Project Manager	6/17/2022	6/20/2022	2

1.3.2	Contract analysis and signature by selected Firm	Construction Firm	6/20/2022	6/21/2022	2
1.4	**Architectural drawings & plan**		**6/22/2022**	**6/29/2022**	**6**
1.4.1	Drawings & plan drafting	Construction Firm	6/22/2022	6/24/2022	3
1.4.2	Drawings & plan acceptance and validation	Project Manager	6/27/2022	6/29/2022	3
1.5	**Feasibility study**		**6/1/2022**	**6/27/2022**	**19**
1.5.1	Costs and schedule analysis	Project Manager	6/1/2022	6/10/2022	8
1.5.2	Environmental impact assessment	Project Manager	6/13/2022	6/22/2022	8
1.5.3	Analysis and assessment reports validation	Project Manager	6/22/2022	6/27/2022	4
1.6	**Legal authorization**		**6/1/2022**	**6/29/2022**	**21**
1.6.1	Legal authorization requisition	Project Manager	6/1/2022	6/8/2022	6
1.6.2	Documents analysis and field visit by authorities	Legal Authorities	6/9/2022	6/22/2022	10
1.6.3	Legal acceptance of the construction	Legal Authorities	6/23/2022	6/29/2022	5
2	**Construction phase**		**6/30/2022**	**9/21/2022**	**60**
2.1	**Official launch of works**		**6/30/2022**	**7/4/2022**	**3**
2.1.1	‘’Laying of first stone’’ ceremony	Project Manager	6/30/2022	7/4/2022	3
2.2	**Team mobilization**		**7/4/2022**	**7/22/2022**	**15**
2.2.1	Human Resources selection	Construction Firm	7/4/2022	7/15/2022	10
2.2.2	Team trainings and orientation	Construction Firm	7/18/2022	7/22/2022	5
2.3	**Materials & tools acquisition**		**7/4/2022**	**7/29/2022**	**20**

2.3.1	Provider's selection	Construction Firm & Project Manager	7/4/2022	7/13/2022	8
2.3.2	Materials & tools requisition	Construction Firm	7/4/2022	7/7/2022	4
2.3.3	Materials & tools reception and verification	Construction Firm & Project Manager	7/14/2022	7/29/2022	12
2.4	**Buildings & installations**		**7/29/2022**	**9/21/2022**	**39**
2.4.1	Space delimitation	Construction Firm	7/29/2022	8/2/2022	3
2.4.2	Foundations and masonry work	Construction Firm	8/4/2022	8/24/2022	15
2.4.3	Vertical structure (walls) construction	Construction Firm	8/25/2022	9/9/2022	12
2.4.4	Roof construction	Construction Firm	9/12/2022	9/16/2022	5
2.4.5	Electric, hydraulic, and anti-fire systems installation	Construction Firm	8/10/2022	9/7/2022	21
2.4.6	Progress reports submission and validation	Construction Firm, Project Manager	7/29/2022	9/21/2022	39
3	**Evaluation phase**		**9/19/2022**	**11/11/2022**	**40**
3.1	**Independent contractors' appointment**		**9/19/2022**	**10/12/2022**	**18**
3.1.1	Evaluation SOW validation and publication	Project Manager	9/19/2022	9/26/2022	6
3.1.2	Independent Contractor selection	Project Manager	9/26/2022	10/7/2022	10
3.1.3	Contract signature	Independent Contractor	10/10/2022	10/12/2022	3
3.2	**Tests' tools and materials acquisition**		**10/12/2022**	**10/28/2022**	**13**
3.2.1	Provider's selection	Independent Contractor & Project Manager	10/12/2022	10/21/2022	8
3.2.2	Tests materials & tools requisition	Independent Contractor	10/12/2022	10/14/2022	3

3.2.3	Tests materials & tools reception and verification	Independent Contractor & Project Manager	10/24/2022	10/28/2022	5
3.3	**Structures and installations evaluation**		**10/28/2022**	**11/11/2022**	**11**
3.3.1	Poultry and facilities evaluation	Independent Contractor	10/28/2022	11/4/2022	6
3.3.2	Systems installation evaluation	Independent Contractor	11/3/2022	11/9/2022	5
3.3.3	Evaluation reports and recommendations	Independent Contractor	11/9/2022	11/11/2022	3
4	**Closing phase**		**11/9/2022**	**12/30/2022**	**38**
4.1	**Implementation of recommendations by the Construction Firm**	Construction Firm	11/9/2022	11/30/2022	**16**
4.2	**Final construction report delivery**		**11/30/2022**	**12/23/2022**	**18**
4.2.1	Final report submission	Construction Firm	11/30/2022	12/12/2022	9
4.2.2	Final report verification and validation	Project Manager	12/13/2022	12/23/2022	9
4.3	**Building's delivery**		**12/26/2022**	**12/30/2022**	**5**
4.3.1	Building's guide and keys delivery	Construction Firm	12/26/2022	12/27/2022	2
4.3.2	Systems operation and utilization manual delivery	Construction Firm	12/26/2022	12/30/2022	5
4.4	**Certificate of achievement delivery by Project Owner & Sponsor**	Project Manager	12/29/2022	12/30/2022	**2**



**CFC: Chicken Farm Construction*

Figure 12. Histogram of net workdays per work package

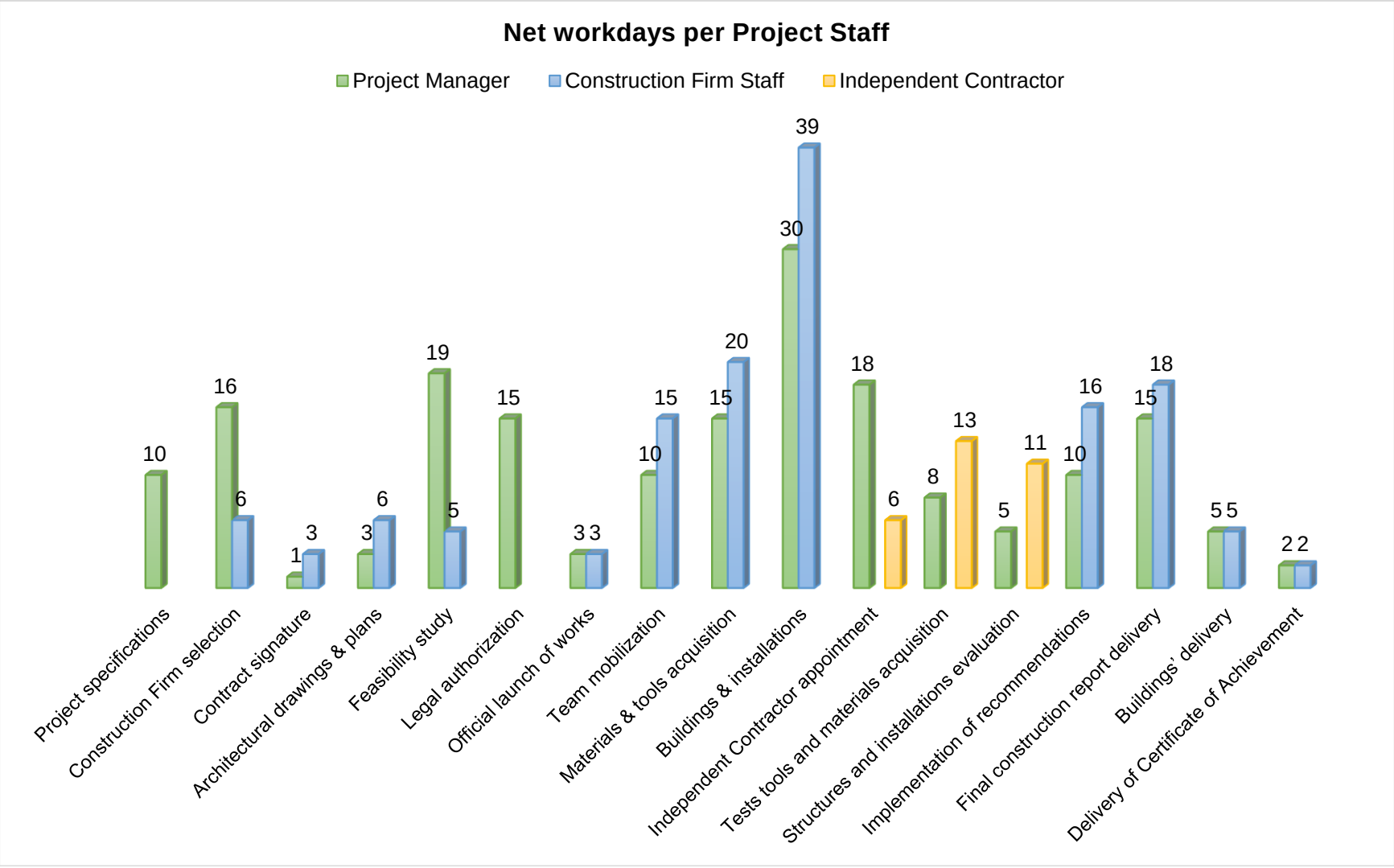


Figure 13. Histogram of net workdays per Project Staff

4.6.7. Staff skills and competencies

To be successful, the project must possess resources with the appropriate set of skills and experiences. Every skill critical to the completion of tasks and deliverables needs to be identified and assessed in terms of the experience and skill level required. The Project Manager should document the various project roles required, the roles, responsibilities, and the required skills and experience. But the Construction Firm has the responsibility to hire the appropriate staff. For each staff, a profile sheet should be created and submitted to the Project Manager. The sample table below shows definition of the Engineer (site Coordinator) role.

Chart 21. Staff profile sheet

Name	Role	Responsibilities	Skills/Proficiency
ABC XY	Engineer (Site Coordinator)	Play a leading role in the implementation of the project. He/she's the main interface of the Project Manager. He leads the teams, controls, coordinates, and plans the work. Associated with the preparatory phases as well as the financial management, he also ensures the organization of the site. The Engineer must possess the following skills: leadership/management, budgeting, scheduling, and effective executive communication.	Leadership/ Management – 1 Budgeting – 1 Scheduling – 1 Executive Communication – 1
…..	….	….	….

N.B. *Proficiency is defined as: 1 – Proficient / 2 – Competent / 3 – Learner / 4 – Novice*

4.6.8. Staff orientation and training

After closing the hiring process, The Construction Firm with the assistance of the Project Manager will realize 1 day orientation session. The following topics should be considered for project orientation:

- Background and project purpose
- Project status
- Review of the project organization chart
- Specific job duties and expectations
- Introduction to the project team (management, staff, and consultants)
- Review project policies, standards, and tools
- Review approaches to Governance, Communications, and Change Control management
- Review the project calendar, including status meetings and team meetings
- Sign required forms such as confidentiality, conflict of interest, and security policies
- Overview of the facility, amenities, nearby restaurants, parking, and transportation etc.

There is currently no training scheduled with regards to the “Chicken Farm Construction” Project since the firm will hire adequate staff with required skill sets. However, if training requirements are identified for the use of some tools, machines or any material, the firm will use the “learning by doing” methodology to train the staff who is in need. So, additional funding will not be necessary for training.

4.6.9. Administrative and performance management

Day-to-day management of assigned project staff should be supported by the Project Manager. However, performance evaluations, performance issues and disciplinary actions are typically still the responsibility of the Site Coordinator (Engineer). As a manager, he will often remain as the general staff supervisor within the project staffing structure, and he will delegate supervision responsibility to the Site Coordinator Assistant or the Foreman.

4.6.10. Staff replacement

Contracted staff may be replaced according to procedures specified in the contractor Scope of Work (SOW) and the associated contract terms and conditions. Résumés for proposed replacements should be submitted for Project Manager approval. Replacement staff must meet the original minimum position qualifications, references should be checked, and an interview process conducted. When possible, it would be good for replacement staff to begin work prior to the original staff departure to ensure appropriate transition of responsibilities and knowledge.

4.6.11. Physical Resources

The physical resources may include things such as supplies, materials, computers, copiers, network cabling, and physical rooms.

4.6.12. Description of physical resources

For this project, the tools and materials presented in the following table will be used. This list is not exhaustive, so it will be completed by the Construction Firm at the appropriate time. The process of acquiring and managing these items is considered in the Procurement Management Plan.

Chart 22. List of physical resources

Item	Description
Tools and materials for masonry work	Sand, cement, gravel, peel, wheelbarrow, mixer...
Tools and equipment for carpentry and joinery work	Board, wood, nails, screws, hammer...
Tools and equipment for plumbing and hydraulic work	PVC pipe, tank, PVC saw...
Tools and equipment for electrical work	Electrical cable, insulating tape, pliers...
Tools and materials for building safety work	Fire extinguisher, alarm...

Tools and equipment for ironwork and welding	Metal saw, metal bars, metal press, anvil, hammer...
Materials and tools for reporting	Computer, camera, scanner, paper, printer...

4.6.13. Resources Management Plan validation

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.7. Communication Management Plan

4.7.1. Introduction

The Communications Management Plan helps to ensure that all project stakeholders have the information they need to perform their roles throughout the execution of the project. Planning and executing project communication activities is essential for project success. The Communications Management Plan determines how to communicate most efficiently and effectively to the various stakeholders. It defines and documents the communication items content, format, frequency, the audience and expected results. It also defines how to communicate project status and the assignment of activities to the various stakeholders, and the communication strategy for each stakeholder, based on their interests, expectations, and influence in the project.

4.7.2. Approach

A key project goal is to ensure timely and appropriate identification, collection, distribution, storage, retrieval, and disposition of project information to the project team, Stakeholders, and the Project Sponsor. When planning this communication plan, one of the major inputs is the Stakeholder Matrix to identify project stakeholders' groups. To that end, this Communication Management Plan includes, but is not limited to, the following:

· Identification of Stakeholder communications requirements
· Information collection sources and responsibilities
· Communication distribution channels
· Schedule of project team meetings…

4.7.3. Roles and responsibilities

This section defines the roles and responsibilities of those involved in the Communication Management Process.

Chart 23. Communication roles and responsibilities matrix

Name	Role	Responsibility
Board of Directors	Project Sponsor	- Communicates project status with the executives and Stakeholders outside the sponsoring organization. - Provides feedback to the Project Manager relative to business issues. - Communicates vision and direction to project team members.
Consultant	Project Manager	- Develops the Communication Management Plan for the project. - Provides overall direction. - Ensures all communications are sent, received, and understood. - Ensures the integrity of the process. - Reviews weekly progress reports from project functional leads. - Provides weekly updates to Project Sponsor.
Engineer	Site Coordinator	- Participates in the development of the Communication Management Plan for the project. - Assists the Project Manager in ensuring all communications are sent, received, and understood based on Stakeholder needs and requirements. - Distributes information using methods that reach Stakeholders most effectively.
Construction Firm Staff	Project Team Members	- Participates in defining communication needs and requirements. - Participates in the dissemination of project information. - Communicate progress and issues to the Site Coordinator.

Name	Role	Responsibility
Population	Community Engagement Group	- Participates in defining communication needs and requirements. - Provides feedback on all communications.
Independent Contractor	Construction's evaluation	- Communicates contract status to the project management team. - Communicates status and issues to Project Manager.

4.7.4. Media (distribution channel)

The communication media that will be used for the project are:

· Emails;

· Documents (MS Word and/or PowerPoint, Excel sheets…);

· Phone calls;

· Formal meetings (using meeting rooms, conference phones, video rooms…);

· Informal meetings (face-to-face dialogues, sms, whatsapp…)

The communication media above contain, or are supported by:

· Minutes of Meeting (MoM);

· The Project Status Report;

· The Project Progress Report;

· The Quality Review Report;

· Contractor Status Report;

· Project Work Plan (updated estimates of effort and schedule);

· Project Logs…

4.7.5. Information collection sources and responsibilities

The planning process requires discussion and dialogue with the project team to determine the most appropriate way to:

· Update and communicate project information.

· Respond to requests from various Stakeholders for that information.

· Decide from where and what source that information should come.

In this section, the identification of the communication items (that will be used for disseminating information) is made. For each communication item, we identify the data source, how often the source data is collected, and from what team member. Also, it describes who is responsible for information dissemination. The next chart (Chart 22) is a sample matrix of collection sources and responsibilities that will be used.

Chart 24. Information collection sources and responsibilities matrix

Communication Item	Data Sources (Frequency of Data Collection)	Dissemination Responsibility	Distribution Channel	Target Audience(s)	Frequency
Status reports	Project team individual status reports (weekly from all team members) Project schedule updates (weekly from Project Manager) Verbal progress reports (daily from all team members) Change control requests (as identified by the Project Manager)	Project Manager / Site Coordinator	Email Group Status Meetings Printed documents Face-to-face dialogues	All Stakeholders Project Team	Weekly
Meetings reports	…….. ……..	Named resource	Email Printed documents	All Stakeholders Project Team	Throughout the project
……..	…….	……	…….	……	……..

4.7.8. Meetings' schedule

Project Meetings schedule is an important step to ensure all project team members know of meetings that may require attendance or may have an outcome that affects their work. This section identifies and describes the type, frequency, purpose, and participants of project meetings as mentioned in the following chart.

Chart 25. Project Meetings' schedule

Communication	Target Audience	Purpose	Frequency
Project Kick-off Meeting	All Stakeholders	Communicate the project plan, and confirm project roles and responsibilities	On the project start date
Team Meetings	Project team members	Review detailed project schedule, tasks, assignments, issues, risks, and action items	Weekly
Project Sponsor(s) meeting	Project Sponsor(s)	Update the Project Sponsor(s) on the project status, budget, critical issues, and change requests	Monthly or as necessary to address significant project issues and/or decisions
Lessons Learned Meeting	All Stakeholders	Capture lessons learned that may benefit future project work and/or other projects	Upon completion of major project activities and during Post Implementation Review

4.7.9. Communication Plan approval

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree to the present as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.8. Risks Management Plan

4.8.1. Introduction

This Risks Management Plan defines and documents the Risks Management Process for the project. It describes how risks will be identified and assessed, what tools and techniques can be used, what are the evaluation scales and tolerances, the relevant roles, and responsibilities, how often risks need to be revisited, etc. It also defines the risk monitoring and escalation process as well as the structure of the Risk Log which will be used to document and communicate the risks and their response actions.

The purpose of this document is:

· To outline the risk approach and process to be used for the project.

· To identify the roles and responsibilities related to risk management.

· To specify the methodology, standards, tools, and techniques used to support risk management.

4.8.2. Approach

Risk management brings visibility to risks and accountability as to how they are handled and ensures that project risks are proactively dealt with and regularly monitored and controlled. The Project Manager working with the Construction Firm and the Board of Directors will ensure that risks are actively identified, analyzed, and managed throughout the life of the project. Risks will be identified as early as possible in the project to minimize their impact. The steps for accomplishing this are outlined in the following sections. The Project Manager or the Site Coordinator will serve as the Risk Manager for this project. This will be set at the starting of the project.

4.8.3. Risks identification

The purpose of this step is to facilitate the identification and documentation of risks that can impact the project objectives. Various techniques will be used for risk identification which typically focus on past trends or future exposure, on a bottom-up or a top-down analysis. Some local companies and Construction's firms have a Risk Typology that groups various types of risks into categories and it will be used as reference. Risk identification will involve the project team, appropriate stakeholders, and will include an evaluation of environmental factors, organizational culture and the project management plan including the project scope. Careful attention will be given to the project deliverables, assumptions, constraints, WBS, cost/effort estimates, resource plan, and other key project documents. A Risk Management Log will be generated and updated as needed. Risks are continuously identified throughout the project lifecycle; however, very early during the Initiating phase, an initial risk list have been created which is in the Project Charter. The same process will be followed by both for the creation of the Risk Log as well as for the inclusion of new risks later in the project.

Initial risk identification was first performed when preparing the Project Charter. So, these are the starting points of this step. The identification of risks will result from: desk reviews, similar projects, interviews, project team brainstorming, meetings, questionnaires, risk checklist analysis, and assumptions analysis.

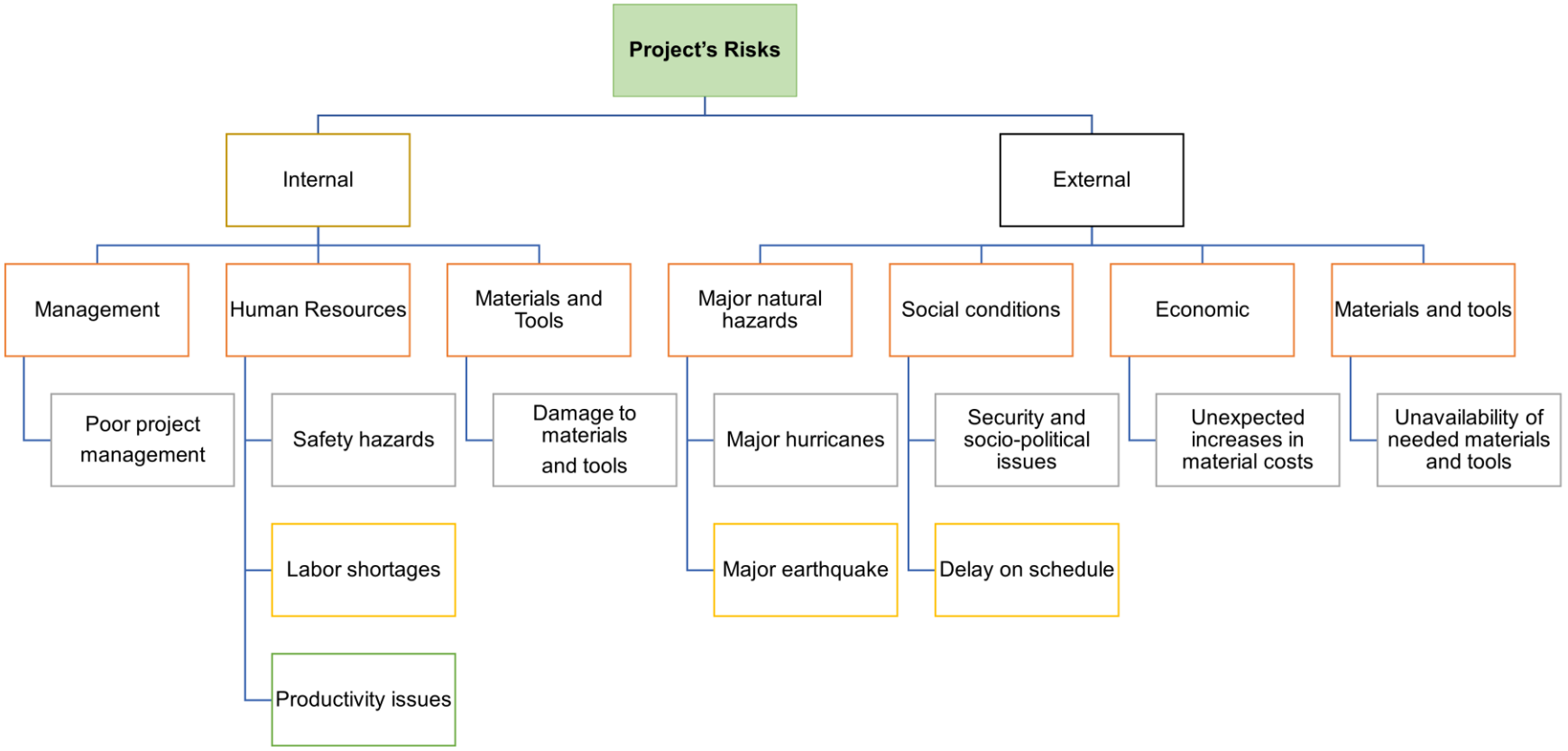


Figure 14. Risks Breakdown Structure

Chart 26. Risk identification and description

ID	Risk description	Causes	Consequences / impacts
1	Safety hazards	- Non-compliance with safety instructions - Improper handling of equipment or tools - Fall and any other accident	- Fractures and injuries of the staff or any individual who frequents the space.
2	Major natural factors / hazards	- Natural causes	- Destruction or damage to construction or equipment - Loss of life - Difficulty in supplying the site
3	Labor shortages & productivity issues	- Incompetence of the staff - Lack or loss of motivation - Poor organization of work	- Poor quality work - Waste of material resources, time, and money
4	Damage to equipment and tools	- Incompetence of the staff - Poor quality of materials and equipment - Lack of training of Staff	- Loss of materials, equipment, and tools
5	Unavailability of needed materials	- Providers out of stock - Natural disasters - Demonstrations, strike…	- Delay on Schedule
6	Unexpected increases in material costs	- Uncontrolled exchange rate (USD – HTG) - Increase in fuel prices - General inflation	- Insufficient budget
7	Poor project management	- Incompetence of Project Manager - Lack of financial and technical resources for project management	- Project failed - Loss of money - Loss of motivation of the Staff

ID	Risk description	- Causes	- Consequences / impacts
8	Delay on Schedule	- Miscellaneous causes (related to previous risks)	- Increase of execution costs
9	Security and socio-political issues	- Elections - Gang activities - Kidnaping - Demonstrations, strikes…	- Delay on schedule - Increase of costs - Project failed - Loss of motivation of Staff - Unavailability of providers
10	Increase in the number of visitors to the site	- Curiosity of the community - Importance of the project to the community - Search of future opportunities	- Accidents on the construction site - Distraction and loss of concentration of construction workers - Encourage partnerships between the company and the community - Identification of potential workers for the farm - Strengthening the links between the company and the community

It should be noted that risk #10 will have many more positive consequences or impacts than negative ones and is therefore considered an opportunity for both the company and the community.

4.8.4. Risks assessment

The purpose of this step is to assess the likelihood/probability and impact of the identified risks in terms of their influence to the project objectives. This assessment is necessary before any risk response planning can be done. Risks are assessed based on their likelihood of occurrence and the impact in project objectives. The product of their likelihood and impact defines the Risk Level, which is then used as a reference for their prioritization and risk response development. Depending on the stakeholders' risk appetite, evaluation scales and tolerances are defined based on which the most appropriate risk response strategies are chosen.

Chart 27. Risks likelihood/probability and impact matrix

		Impact				
		1=Very low	2=Low	3=Medium	4=High	5=Very high
Likelihood	5=Very high	5	10	15	20	25
	4=High	4	8	12	16	20
	3=Medium	3	6	9	12	15
	2=Low	2	4	6	8	10
	1=Very low	1	2	3	4	5

Legend:

	Risks can be accepted, and contingency plans may be developed.
	Risks cannot be accepted, a risk response strategy should be developed (avoid, reduce, transfer/ share)
	Unacceptable – immediate risk reduction or avoidance response
- - - -	Risk appetite

The project will use the Risk Likelihood (probability)/Impact Matrix referred in Chart 27. The Risk Likelihood (probability)/Impact Matrix represents the different combinations of likelihood and impact of project risks on a scale from 1 to 5 and defines risk levels that suggest risk response strategies. For this project, only Low-Medium-High (probability or impact) scales are possible.

Risk level scale details:

***Likelihood**:*

- ***Very low**: less than 5% chances of occurrence.*
- ***Low**: between 5% to 10% chance of occurrence;*
- ***Medium**: between 10% to 25% chance of occurrence;*
- ***High**: between 25% to 50% chance of occurrence;*
- ***Very high**: more than 50% chance of occurrence.*

Impact:

- ***Very low**: less than 1% of project budget affected, or/and other project baselines are nearly not impacted, or/and few individuals affected (only internal to project team), or/and no reputational impact or/and easy and quick capacity to react and resolve the issue.*
- ***Low**: 1% to 2% of project budget affected, or/and low impact in other project baselines, or/and only one milestone affected, or/and projects stakeholders may be affected, or/and sufficient project competencies to resolve the issue (if risk occurs).*
- ***Medium**: 2% to 5% of project budget affected, or/and medium impact in other project baselines, or/and one or more milestones affected, or/and projects stakeholders will be to some extent affected, or/and project objectives may be affected, or/and reputational impact among technical staff in other entities or units, or/and formal complaints, or/and limited project competencies to resolve the issue (if risk occurs).*
- ***High**: 5% to 10% of project budget affected, or/and high impact in other project baselines, or/and several milestones affected, or/and projects stakeholders will be affected/concerned, or/and project objectives will be affected, or/and reputational impact in several entities or units, or/and formal and legal complaints, or/and insufficient project internal competencies to resolve the issue (if risk occurs).*
- ***Very high**: more than 10% of project budget affected, or/and very high impact in other project baselines, or/and several milestones affected, or/and projects stakeholders will be very affected/concerned, or/and the overall project will be affected, or/and external reputational impact, or/and significant formal and legal complaints, or/and external competencies are needed to address the issue (if risk occurs).*

Chart 28. Risk register

ID	Risk description	Probability			Impact			Score and color	Strategy	Action
		H	M	L	H	M	L			
1	Safety hazards		X			X		9	Reduce	Constant awareness of workers on the precautions to be taken and the attitudes to be taken on the site Training and guidance on the handling of materials and tools Availability of first aid kit
									Share (if risk occurs)	Use of company health insurance for appropriate care
2	Major natural factors / hazards		X		X			12	Reduce	Implementation of contingency plan for each type of hazard
3	Labor shortages & productivity issues			X	X			8	Reduce	Planning and implementation of adequate hiring process to select the best possible Staff

ID	Risk description	Probability			Impact			Score and color	Strategy	Action
		H	M	L	H	M	L			
4	Damage to equipment and tools		X		X			12	Reduce	Constant awareness of workers on the precautions to be taken and the attitudes to be taken with the materials and tools Training and guidance on the handling of materials and tools
									Transfer (if the risk occurs)	Availability of guarantee period in the contracts with providers
5	Unavailability of needed materials			X	X			8	Reduce	The planning has been based on available materials in the country
6	Unexpected increases in material costs	X			X			16	Reduce	Each line of the budget has been previewed with 10% up the actual price

ID	Risk description	Probability			Impact			Score and color	Strategy	Action
		H	M	L	H	M	L			
7	Poor project management			X	X			8	Reduce	Appointment of qualified and committed Project Manager
8	Delay on Schedule		X		X			12	Reduce	Plan to add 2 months on the schedule (no cost extension)
9	Security and socio-political issues	X			X			16	Reduce	Plan to have on site lodging for the Staff
10	Increase in the number of visitors to the construction site		X				X	6	Reduce	Plan a visit schedule so as not to disrupt the smooth progress of the work and avoid the risk of accidents.
									Accept	Take advantage of visitor flow to promote the project and its opportunities.

For this project, all the identified risks are in the Yellow zone. The previous paragraphs of this section (risks assessment) detail the scoring for each zone.

4.8.5. Risks responses strategies

The purpose of this section is to define the available risk response strategies to be used for this project. Since this project can be impacted by risks in the yellow zone (scale), the possible risk response strategies are:

- **Reduce**: risk mitigation or reduction through the proactive implementation of risk reduction activities.
- **Transfer/Share**: transfer a risk to, or share a risk with other entities, e.g. through insurances, sub-contracting, partnering etc.
- **Accept**: only when the risk represents an opportunity (positive risk), as it is for risk #10 in the previous table.

4.8.6. Risks control activities

The purpose of this step is to monitor and control the implementation of the risks response activities while continuously monitoring the project environment for new risks or changes (e.g., probability and/or impact) in the risks already identified. The Project Manager will monitor, and control risks based on Project follow-up meetings or on information received from other project stakeholders, in result of:

- Identification of new risks by any other project stakeholders, in consequence of changes in the project environment.
- New proposed ways to deal with a risk (adding/changing actions).
- Implementation of any of the given actions or on general events or developments that will change the values for likelihood and/or impact of the identified risks.
- Any other changes.

The Risks Log must be updated at least once a week by the Project Manager, after the Project follow-up meetings with the Construction Firm or any other stakeholder. The updating of the Risk Log can include adding new risks or actions, updating the status of response activities, changing risk levels based on mitigation actions, changing the assignment of actions, etc. Additionally, there is a procedure in place to collect the status of each risk and action and the comments related to the effectiveness, quantification of resources spent, difficulties, potential problems, and

dependencies of the actions. This information must be consolidated and updated in the Risks Log, then presented to the Board of Directors. The activities described above will be performed by the Project Manager throughout the project lifecycle in line with the Risk Management Plan.

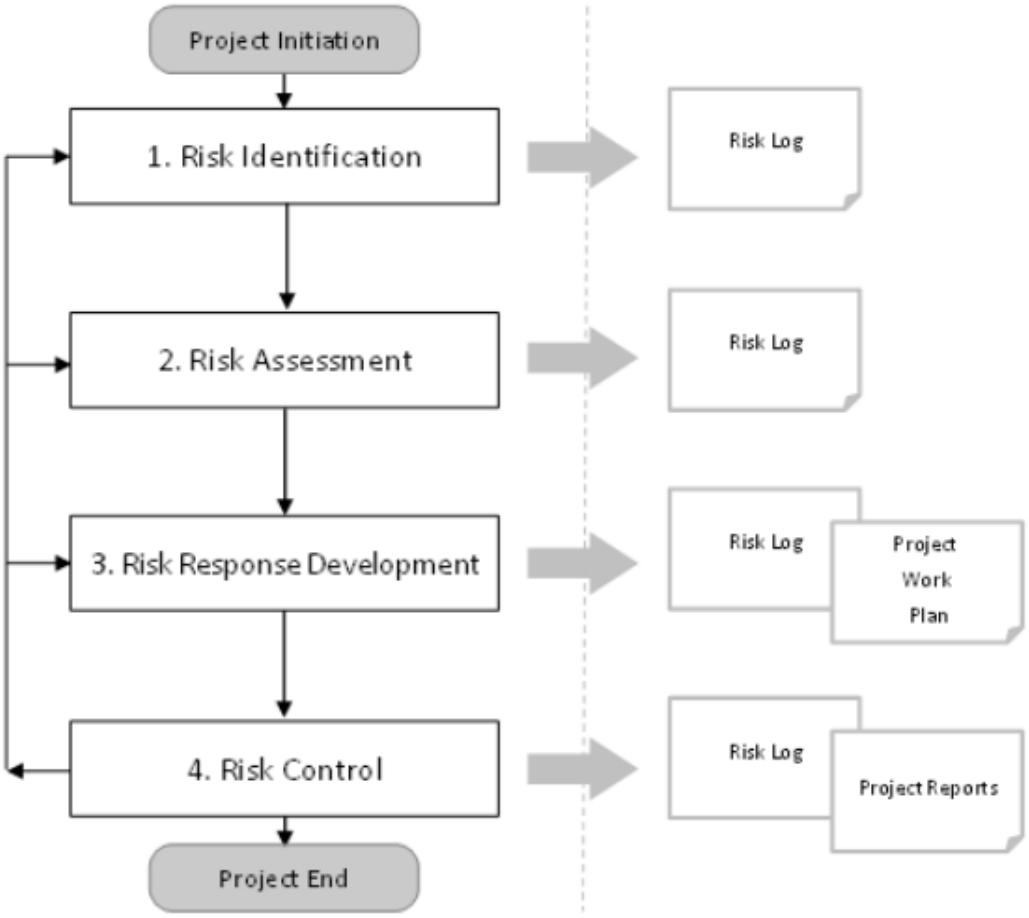


Figure 15. Project Manager activities during risks management

The risk communication activities will be part of the project *Communications Management Plan*. The main communication items identified are:

- Collection of new risks or changes to risks/actions in the weekly Project follow-up meetings;
- Report of risks (risk level>=**X**) and related actions status in the monthly meetings of the Project Sponsor (Board of Directors);
- Request of risks or actions approval to the Board of Directors (risks with a risk level >=**X**);

- Report risks list in the weekly Project Progress reports;

4.8.7. Risks Management Plan approval

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.9. Procurement Management Plan

4.9.1. Introduction

This Procurement Management Plan sets the procurement framework for the "Chicken Farm Construction". It will serve as a guide for managing the procurements throughout the life of the project and will be updated as acquisition needs change. This plan identifies and defines the items to be procured, the types of contracts to be used in support of this project, the contract approval process, and decision criteria. The importance of coordinating procurement activities, establishing firm contract deliverables, and metrics in measuring procurement activities is also included.

4.9.2. Approach

The Project Manager will provide oversight and management in concert with appropriate project's staff for all procurement activities planned for this Project. The Project Manager will work with the project team to identify all items to be procured for the successful completion of the project, then he will review the procurement list with the Project Board of Directors for approval. The process involves determining whether to acquire outside support and, if so what to acquire, how to acquire it, how much is needed, and when to acquire it.

4.9.3. Procurement scope

This section relates the project procurement items and/or services that will be determined essential for completion and success of the project. They will be found in the workbook called "Project Procurement Workbook." Next chart is a sample of the workbook which will be used.

Since this Project was designed to be sustainable, the procurement processes will comply with the Sustainable Development Goals requirements, specifically the SDG 17 - Target 7 which says: "*Promote public procurement practices that are sustainable, in accordance with national policies and priorities*". To do so, this procurement processes will consider sustainability in all procurement decisions (e.g., actively search and give preference to local suppliers whenever possible,

ensure timely and fair payment of suppliers, hold suppliers and their supply chains to the same standards…)

Chart 29. Procurement workbook sample

Item/Service	Justification	Needed By
Item A		
Item B		

4.9.4. Contract types

All products and services for this project will be solicited under firm fixed-price contracts. The project team will work with Site Coordinator to define the items, types, quantities, services and required delivery dates. Once approved by the project Sponsor and the Project Manager, the request for proposal (RFP) will solicit bids from vendors to procure the required items, with the required time frame, and at the best value to the state under the firm-fixed price contract with the selected vendor. The contract will be awarded for short-fixed term according to the needs of the Project.

4.9.5. Procurement risks management

To ensure project success, potential procurement risks must be managed. While all risks will be managed according to the project Risk Management Plan, there are specific procurement risks which must be considered, such as:

· Unrealistic vendor schedule and cost expectations

· Possible conflicts with current contracts

· Configuration management for upgrades and improvement of already purchased technology/tools/materials

· Potential delays in the procurement process

· Potential shipping delays

· Potential final product does not meet specified requirements…

These risks are not all-inclusive, and the standard risk management process defined in the Risks Management Plan will be used to identify, document, analyze, manage, and mitigate risks.

4.9.6. Procurement constraints and assumptions

Several project constraints exist and will be considered as part of the project's Procurement Management Plan. These constraints will be communicated to all vendors to determine their ability to operate within these constraints. These constraints apply to several areas which include:

- Schedule – The project schedule is not flexible and the procurement activities, contract administration, and contract fulfillment must be completed within the established project schedule.
- Cost – The project budget has contingency and management reserves built in. However, these reserves may not be applied to procurement activities. Reserves are only to be used in the event of an approved change in project scope or at management's discretion.
- Scope – All procurement activities and contract awards must support the approved project scope statement. Any procurement activities or contract awards which specify work which is not in direct support of the project's scope statement will be considered out of scope and disapproved.
- Resources – All procurement activities must be performed and managed with current staff. No additional staff will be hired or re-allocated to support the procurement activities on this project.
- Technology/Tools/Materials – Parts specifications have already been determined and will be included in the statement of work. While proposals may include suggested alternative material or manufacturing processes, parts specifications must match those provided in the statement of work exactly.

4.9.7. Vendors management

The Project Manager is ultimately responsible for managing vendors. In order to ensure the timely delivery and high quality of products from vendors, the Project Manager and the Site Coordinator or his/her designee will overview weekly the

purchasing and contracts to discuss the progress for each procured item. The purpose of these meetings is to review all documented specifications for each product as well as to review the quality test findings. This forum will provide an opportunity to review each item's development, or the service provided in order to ensure it complies with the requirements established in the project specifications. It also serves as an opportunity to ask questions or modify contracts or requirements ahead of time to prevent delays in delivery and schedule. The Project Manager will be responsible for scheduling this meeting on a weekly basis until all items are delivered and are determined to be acceptable.

In order to evaluate Vendors' performance, internal metrics for procurement are established for this project's procurement activities. Each metric is rated on a 1-3 scale as indicated in the sample below:

Chart 30. Performance Metrics for Procurement Activities

Vendor	Product Quality	On Time Delivery	Documentation Quality	Development costs	Development Time	Cost per Unit	Transactional Efficiency
Vendor A	2	3	…	…	…	…	…

1 – Unsatisfactory / 2 – Acceptable / 3 - Exceptional

4.9.8. Procurement Management Plan approval

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Schedule Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.10. Stakeholders Management Plan

4.10.1. Introduction

This stakeholder management plan is set to be used for: planning the engagement of stakeholders, developing strategies to reduce or eliminate resistance and creating strategies to increase support and buy-in. Because planning for stakeholder management generates activities, this plan becomes an input to other subsidiary plans.

4.10.2. Stakeholder identification

This section describes the Stakeholders' roles and responsibilities that will be performed for the success of the project. Next Chart (Stakeholder Register) is the tool that will be used for this purpose.

Chart 31. Stakeholders register

Role	Function	Responsibilities
Project's Owner and Sponsor	Company's Board of Directors	Ensure and consolidate the company's interests and the rational use of the money being invested
Project's Supervisor	Project Manager - Consultant	Supervise and ensure compliance of construction with project specifications
Project's Team Members	Construction Firm Staff	Build the chicken coop and related facilities
Project's Technical Assessor	Independent Contractor	Test and evaluate the buildings and the systems installation after the construction phase
Community Engagement Group	Population	Ensure that the project is being executed in a safe way for environmental issues
Project's Legal Auditor	Local Authorities	Ensure compliance with legal requirements for construction

4.10.3. Stakeholders Analysis and Control

This section Provides analysis for each stakeholder identified above. Then, it will allow answering the following questions:

- What does this stakeholder need?
- What expectations does this stakeholder have?
- What is this stakeholder's greatest concern?
- What is needed from this stakeholder?
- What is the risk if this stakeholder is not engaged?
- Should we monitor, keep informed, keep satisfied or manage them closely?
- What is the communication strategy for this stakeholder? Include the methods and frequency. (Include in the communications management plan.)
- What information should be distributed to this stakeholder and what concerns should be addressed? How and when?
- What are the most important times/phases for engaging this stakeholder and how should this stakeholder be engaged?
- Who is the person responsible for performing the activities described above?...

Chart 32. Stakeholder Analysis matrix

Stakeholder	Internal or External Stakeholder	Unaware, Resistant, Neutral, Supportive or Leading?	Influence (1-5 with 5 being the highest)	Impact (1-5 with 5 being the highest)	Interest (1-5 with 5 being the highest)
Project's Owner and Sponsor	Internal	Leading	5	5	5
Project Manager	Internal	Leading	4	4	4
Construction Firm	Internal	Leading	4	4	4

Stakeholder	Internal or External Stakeholder	Unaware, Resistant, Neutral, Supportive or Leading?	Influence (1-5 with 5 being the highest)	Impact (1-5 with 5 being the highest)	Interest (1-5 with 5 being the highest)
Independent Contractor	Internal	Neutral	3	4	4
Community Engagement Group	External	Supportive	2	3	3
Project's Legal Auditor	External	Neutral	1	4	2

N.B.: *Impact and Influence are measured by Very-High, High, Medium, Low, Very-Low.*

State of change readiness is assessed using the measures from PMBOK as follows:

U – Unaware – this group has no information about the project
R – Resistant – aware of project and resistant to the changes and impacts the project may bring
N – Neutral – aware of the project and neither supportive nor resistant
S – Supportive – aware of the project and the potential changes and impacts and is supportive
L – Leading – aware of the project and actively engaged to ensure the project's success

4.10.4. Stakeholder Management Plan approval

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Scope Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

4.11. P5 Impacts Analysis

4.11.1. Introduction

A good way of making sure the project stays sustainable is to have that goal in mind from the beginning of the project. Once it is put into the vision of the project, it cannot be forgotten about. Ensuring relevant sustainability in all project areas will guaranty that the environmental damage is minimized.

As the Project Manager directs the consumption of project resources, he/she should be looking at all factors, both inside and out of the company, over the entire life cycle of this project. That is why it's important that he/she maintains a sustainable life cycle mentality, from the project's beginning till its end.

The reason for this is that Experts customarily mention that: "*sustainability involves balancing four different areas*". Those include:

- environment, such as climate change, pollution …
- economy, such as affordability
- society, such as community
- administration, such as health and safety.

4.11.2. Approach

As presented in the "GPM P5 impacts analysis" template, the method to achieve a good quality analysis is that Project Manager and the Project Team will follow the next steps:

• Revision of P5 Standard's category, subcategory, and element descriptions

• Identification of internal and external events which may occur during the project or during the useful life of the project's product for each of the elements.

• Description of the cause(s) of the events and the potential sustainability impacts of each.

• Rating of the impacts based on the magnitude of their effects on sustainability.

• Identification of possible responses to each event to minimize the impacts of negative events and maximize the impacts of positive events.

• Re-rating of the impacts based on the assumption that the response is implemented.

The following chart (Chart 32) will be used as a tool to conduct the impacts' evaluation. The contents are subjected to change regarding this Chicken Farm Construction Project realities.

4.11.3. Importance

As this project seeks to be sustainable, the P5 impact analysis will provide key decision making. This will significantly improve the project's value, mitigate risk, improve benefits, and maximize the positive impact to the environment, society, and economy.

Chart 33. P5 Impacts analysis matrix

General Information	
Instructions	Insert additional rows as needed for any elements with multiple items. If there are any elements with no identified impacts, leave the row there for possible use during updates. Rate each potential impact both before and after the proposed response.
Rating Statement	*This impact will **improve** the project's outcome(s) from a sustainability perspective.*
Rating Scale	5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly disagree Note: "*strongly disagree"* means that this impact will ***worsen*** the project's outcomes from a sustainability perspective, while "*neutral"* means that this impact is not expected to have any effect on the project's outcomes from a sustainability perspective.

P5 Category		**Description (Cause)**	**Potential Impact**	**Proposed Response**	**Impact Score**	
Subcategory	**Element**				**Before**	**After**
2.1 Product Impacts						
2.1.2	Lifespan of the product	Major natural disasters destroy agricultural structures	Loss of investment	Design requirement for the construction to resist to major natural disasters	1	4
2.1.3	Servicing of product	Poultries do not have adequate and timely maintenance	Reduce productivity and profit	Company previews maintenance functioning and operational funds to support maintenance costs	2	5
2.2 Process (Project Management) Impacts						
2.2.1	Effectiveness of project processes	Scope of Work does not match market availability / reality	Issues with contractors and suppliers	Conduct market investigation and ask for experts' input to prepare adequate SOW	2	4

P5 Category		Description (Cause)	Potential Impact	Proposed Response	Impact Score	
Subcategory	Element				Before	After
2.2.3	Fairness of project processes	Call for tenders	Competitive bids are received	Provide information and clarification to all bidders at the same time to ensure transparency and equity	4	5
3 People (Social) Impacts						
3.1 Labor Practices and Decent Work						
3.1.1	Employment and staffing	Processes for the recruitment of local staff	large work's condition differences between the salaries and benefits of the different job categories	Create competitive work conditions, hire the right people, create a safe environment for employee engagement, assessment, and feedback, comply with national employment laws, policies, and standards	2	4
3.1.3	Project health and safety	Employees have limited knowledge about relevant health and safety laws and regulations applying to construction	Injury, harm, or death	Placement of safety and security instructions at specific places, and execution of an obligatory safety training program covering rules, regulations, and safety plans for staff	2	4
3.1.7	Local competence development	Local staff were not accustomed to using sophisticated equipment and tools	Accidents, damage to materials and tools, loss of time and money	Training on handling equipment and tools	1	5

P5 Category		Description (Cause)	Potential Impact	Proposed Response	Impact Score	
Subcategory	Element				Before	After
3.2 Society and Customers						
3.2.1 Community support		Community is not aware of the project	The community protests and boycotts the project's activities	Creation of a Community Engagement Group to ensure that the interests of the locality are upheld throughout the project's execution	2	4
3.2.2 Public policy compliance		Legal requirements are not respected during the construction	Legal proceedings may be brought against the company	Asking for legal acceptance from Authorities to ensure compliance with local and public policy	2	5
3.2.4 Customer health and safety		Company employees (not involved in the work) regularly visit the construction site to get an idea of the project's progress	Accidents, injuries, fracture	Development of a visiting schedule outside working hours, provision of protective materials and equipment, prohibition of access to dangerous spaces	1	4
3.3 Human Rights						
3.3.2 Age-appropriate labor		The precarious situation of the community increases the demand for jobs	Putting minors to work (under 18 years)	Proper scrutinize the files and identity documents of job seekers to avoid making the minors work	2	4
3.4 Ethical Behavior						

P5 Category		Description (Cause)	Potential Impact	Proposed Response	Impact Score	
Subcategory	Element				Before	After
3.4.1 Procurement practices		Sustainable alternatives of goods and services are more expensive	sustainability is not considered in the cost analysis, unnecessary waste is created, and sustainability is not enforced over all aspect during the life cycle of the project	Sustainability considerations are integrated in all procurement processes	2	4
3.4.2 Anti-corruption		national traditions allow gift giving to business associates, stakeholders, and vendors	Bribery and potential lawsuits	Ensure all employees know that giving and accepting gifts is not allowed, that there is zero tolerance for this practice, and that those guilty of this will be immediately fired.	1	4
3.4.3 Fair competition		Public calls for tenders are launched without any restriction	Conflicts of interest and favoritism	Set-up a committee for bids' analysis or hiring process to avoid any involvement of stakeholders in favor of any supplier or employee	1	4

P5 Category		Description (Cause)	Potential Impact	Proposed Response	Impact Score	
Subcategory	Element				Before	After
4 Planet (Environmental) Impacts						
4.1 Transport						
4.1.1 Local procurement		Biodegradable and reusable items are very expensive	Tendency to use many more non-biodegradable and single-use products and items	The procurement plan plans to give priority to items that can meet sustainability requirements considering environmental protection	2	4
4.1.2 Digital communication		Lack of effective communication infrastructure encourages the use of traditional (paper-based) means of communication and reporting	Use of a lot of paper	Raise awareness to use much more of the available technology (email, SMS, WhatsApp) to communicate, report etc.	3	4
4.2 Energy						
4.2.2 CO2 emissions		Contractor's equipment is faulty	High carbon emissions from construction equipment	Include selection criteria for use of construction equipment that reduce emissions. Award bonus points	2	4

P5 Category		Description (Cause)	Potential Impact	Proposed Response	Impact Score	
Subcategory	Element				Before	After
4.4 Consumption						
4.4.1	Recycling and reuse	Biodegradable and reusable items are very expensive	Tendency to use many more non-biodegradable and single-use products and items	The procurement plan plans to give priority to items that can meet sustainability requirements considering environmental protection	2	4
5 Prosperity (Economic) Impacts						
5.3 Economic Stimulation						
5.3.1	Local economic impact	The economic activities of the locality do not allow families to meet their needs	Poverty and unsatisfied primary needs	Local labor is prioritized during project execution. The operation of the chicken coop will offer various opportunities to the locality (labor, resellers, carriers ...)	1	4

4.11.4. P5 Impact Analysis approval

The signatures of the people below indicate an understanding in the purpose and content of this document by those signing it. By signing this document, you agree this as the formal Scope Management Plan for the Chicken Farm Construction Project.

Approved by: Date: <Approvers Name> Board of Directors	Approved by: Date: <Approvers Name> Project Manager

5. CONCLUSIONS

1. As a result of the general objective, the Project Management Plan has been developed using the Research-Action methodology. In fact, the Project Manager has met with "*LES ENTREPRESES IDEALE*" company's Board and Staff to compile fundamental information and has used the fifth edition of the *PMBOK® Guide*, the *GPM P5 standard* and other resources as a basic developmental tool for the "*Chicken Farm Construction*" Project Management. However, considering that neither the Project Manager nor the Project Owner & Sponsor are construction specialists, there are still details needed to be refined, reviewed, and updated in order to incorporate them into the final document. This will be done with the Construction Firm.

2. As a deliverable of specific objective 1, the Project Charter has been developed. It is based on the Project Owner & Sponsor's needs and desire. The Project Charter is a useful tool to initiate the project in a structured manner. It serves the function to assign authority to the Project Manager thus he is enabled to transfer resources to the project. Since the Project Charter contains an overview of the project it ensures that every person involved is on the same page. Furthermore, it sets a timeframe to the project so that the Project Manager can see if the project is on time or not.

3. The Scope Management Plan was created as a result for specific objective 2. It is the document which describes how the project goals will be achieved and it helps with the understanding of the requirements on what should be done. The parties understand and agree on the project scope and understand that it's an effective way of estimating the time or the cost of this project. If there must be any changes made on the project, it could upset the project schedule and affect the cost of the project. As content, it presents the WBS, WBS dictionary, Requirements Management Plan, Requirements Document, and Requirements Traceability Matrix. All of these, were developed using templates, meetings with Project Owner & Sponsor, documents, etc.

4. The Schedule Management Plan is the result from specific objective 3. It was developed to have control over the project schedules, which requires a constant eye on activity duration estimates and actual time committed to activities to ensure the project's completion within the time constraints. After hiring the Construction Firm (as expert judgment), the document will be refined when appropriate. Activity List, Schedule Network Diagram, Resource Assignments table and Project Gantt chart are key elements of the document.

5. The elaboration of Cost Management Plan is the output from specific objective number 4. The budget has been created as a basis to follow, manage and control the project's cost. Cost management is indeed one of the essential requisites for the success of any project or business for that matter. When one knows the scope for the cost that the business can bear, it becomes much easier to set the goals and accordingly work towards it.

6. Project Quality Management Plan, the output for specific objective 5, is not an independent or separate process that takes place at the end of the project to measure the level of output quality. Rather, it is a continuous process that starts with the project and ends with it. It is part of every project management process from the time the project begins to the final stages in the closure phase of the project.

7. To address specific objective number six, the Resource Management Plan has been developed. Resource management is strongly linked to project management planning. These are different but complementary disciplines. The more resource management is implemented with a holistic approach, the greater the possibility of being able to act in a timely manner in order to keep the project on track and direct it towards success, respecting the pre-established times and budget. Therefore, it is necessary for the Project Manager to have the right tools to have information about the resources while the project is in progress.

8. To fulfil specific objective number seven, the Project Communications Plan, a template was used along with a list of all stakeholders and their roles and

responsibilities. Communication management is vital for any organization irrespective of its size. It contributes to achieving the company's overall objectives as well as creates a positive and friendly environment. This Plan seeks to be an effective communication process which will lead to an increase in profits, high employee satisfaction and company recognition.

9. The deliverable for specific objective 8, the Risk Management Plan, has been created. This Risk Management Plan is the process of selecting and implementing measures to modify the risk. Risk treatment includes as its major element, risk control/mitigation, but extends further to, for example, risk avoidance, risk transfer, risk financing, etc. The risk analysis process assists the effective and efficient operation of the project by identifying those risks which require attention by management. They will need to priorities risk control actions in terms of their potential to benefit the project.

10. The Procurement Management Plan deliverable, created for specific objective 9, was developed. It should be kept in mind, however, that this procurement management system must run efficiently and smoothly for all benefits to be reaped. The key to this would therefore be an efficient system as well as the right suppliers and resources. For procurement management, there should be a team of highly trained individuals, using tools to identify the project’s procurement management approach, types of contracts used and contract approval process.

11. The Stakeholder Management Plan has been developed for specific objective 10 to achieve an outcome from the projects, good stakeholder management practices as required. Stakeholder management is the effective management of all participants in a project, be it external or internal contributors. The most important element in stakeholder management is communication where the manager will have to spend much more time in doing meetings, checking, and replying to e-mails and updating and distributing reports, etc.

12. The P5 Impact Analysis Matrix has been filled as the deliverable of the specific objective 11, P5 Impact Analysis. It is a sustainability report that gives information

about economic, environmental, social and governance performance of the project. Establishing a sustainability reporting process helps them to set goals, measure performance and manage change. This matrix-report is the key platform for communicating the performance information (both positive and negative) that is needed by the project and all are affected by them. As a sustainability reporting process, this P5 Impact Analysis is a vital step for managing change toward a sustainable global economy, one that combines long-term profitability, social justice, and environmental stewardship regarding the Corporate Social Responsibility (CSR) of the project.

6. RECOMMENDATIONS

This Project Management Plan has been developed by the Project Manager in coordination with the Board of Directors of the company as Project Owner & Sponsor. Considering that these 2 entities are neither Architect nor Engineers, the document has limits that will have to be reviewed before the execution of the project with the Construction Firm. Specifically, it is recommended that:

1. The Project Manager works with the Project Sponsor to review the schedule and associated costs.

2. The Project Manager will have to sit down with the Construction Firm to refine the technical details of the document to avoid having too many requests for change during execution period.

3. The Project Manager, with the technical execution team, will have to strengthen, modify, or change the proposed tools so that there is a good synchronization of the technical and managerial aspects of the project.

4. After the final update of the document, the Project Manager will have to ensure that it is implemented as rationally and accurately as possible.

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8. APPENDICES

Appendix 1: FGP Charter

PROJECT CHARTER **Formalizes the project start and confers the project manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well-defined project boundaries.**	
Date	**Project Name:**
November 8th, 2021	Project Management Plan for the construction of a chicken coop at Lory, locality of Haiti's Northern Department.
Knowledge Areas / Processes	**Application Area (Sector / Activity)**
Knowledge Areas: Integration, Scope, Time, Cost, Quality, Human Resources, Communication, Risk, Stakeholders and Procurement Management **PM Processes:** Initiating, Planning, execution, Monitoring & control, closing	Agriculture facilities
Start date	**Finish date**
November 8th, 2021	May 9th, 2021
Project Objectives (general and specific)	
General Objective: To develop a Project Management Plan that considers all the optimal standards of poultry construction that meet the economic and socio-environmental characteristic of the locality of Lory in Haiti's Northern Department. **Specific objectives:** a) To develop a project charter that can be used as a statement of the scope, objectives, and participants of the project. b) To create an effective Scope management plan that ensures the project works include all elements required to complete the work. c) To create an effective Time management plan for ensuring the timely completion of the project. d) To create an effective Cost management plan to estimate, manage and control project finances.	

e) To develop a sustainable Quality management plan to guarantee that the project delivers a quality output that is fit for purpose with the minimum stakeholder's acceptance criterion.

f) To create a viable Human Resource management plan to make the most effective use of people involved with the project regarding national and international laws on labor.

~~g)~~ To develop an effective Communication management plan for ensuring communications on the project are planned and carried out appropriately for the collection, dissemination and storage of information

h) To create a sustainable Risk management plan that allows to quickly identify, assess, and manage risks and the most appropriate responses.

i) To develop an effective Procurement management plan to acquire the goods and services from outside the performing project team.

j) To develop a viable Stakeholders management plan that identifies, manages, engages stakeholders throughout the project and develops relationships with those people and organizations which are impacted by the project, and which influence or determine how the team works.

Project purpose or justification (merit and expected results)

This project is justified by the fact that it aims to ensure the construction of the poultry according to the standards and technical principles in this area. The main purpose of this study is to develop a Project Management Plan for the company named "LES ENTREPRISES IDEALE" for its chicken coop construction project. The Project Management Plan designed for the company, considering local realities (beliefs, economy, culture, environment, etc.), will be the cornerstone of the success of the construction project which will have a significant impact and contribution to improving the standard of living of the people of Lory.

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

As service, this project will design and plan the implementation of a Project Management Plan.

Assumptions

1. **Financial and Material resources:**
   - the project can be achieved with the financial support of family, friends, and colleagues.
2. **Human resources:**
   - the project can be completed under the leadership of 1 project manager, with the support of experts.

Constraints

The lack of data, bad condition of communication facilities & services, and reluctance of the population to share information in surveys can have negative impacts on the schedule.

Preliminary risks

1. The company "LES ENTREPRISES IDEAL" could not be any more interested to construct the poultry if political and security aspect of the country are not addressed in a way to encourage this kind of investment.
2. If the Tutor's reactions are not regular, it can negatively impact the overall schedule.

Budget

The estimate cost is 1,000.00 USD (it will be used for having access to data, realizing surveys, printing documents…)

Milestones and dates

Milestone	Start date	End date
Final Graduation Project	**November 8, 2021**	**May 9, 2022**
1. Graduation Seminar	November 8, 2021	December 10, 2021
1.1 Project Charter		
1.2 WBS		
1.3 Chapter I – Introduction		
1.4 Chapter II – Theoretical Framework		
1.5 Chapter III – Methodological Framework		
1.6 Executive summary/abstract		
1.7 Indexes		
1.8 Bibliography		

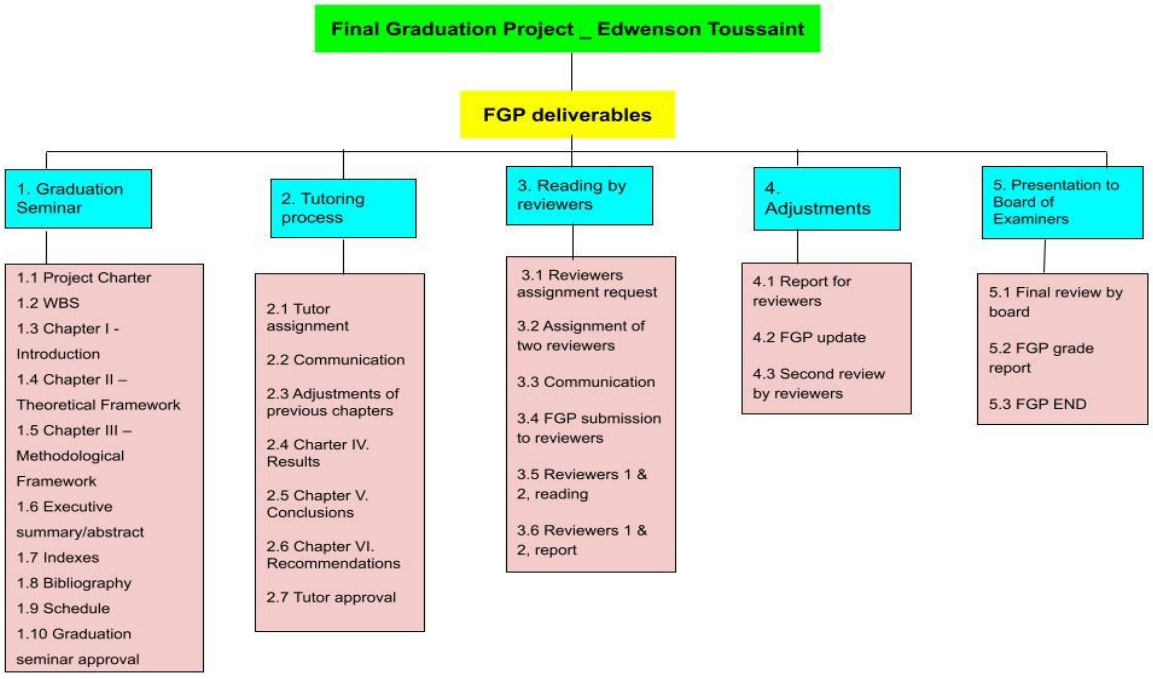
1.9 Schedule		
1.10 Graduation seminar approval		
2. Tutoring process	February 14, 2022	March 13, 2022
2.1 Tutor assignment		
2.2 Communication		
2.3 Adjustments of previous chapters		
2.4 Charter IV. Results		
2.5 Chapter V. Conclusions		
2.6 Chapter VI. Recommendations		
2.7 Tutor approval		
3. Reading by reviewers	March 15, 2022	March 31, 2022
3.1 Reviewers assignment request		
3.2 Assignment of two reviewers		
3.3 Communication		
3.4 FGP submission to reviewers		
3.5 Reviewers 1 & 2, reading		
3.6 Reviewers 1 & 2, report		
4. Adjustments	April 4, 2022	April 26, 2022
4.1 Report for reviewers		
4.2 FGP update		
4.3 Second review by reviewers		
5. Presentation to Board of Examiners	April 28, 2022	May 9, 2022
5.1 Final review by board		
5.2 FGP grade report		
5.3 FGP END		

Relevant historical information

"LES ENTREPRISES IDEALE" is a five-year family company based in Haiti's second city (Cap-Haitian). This company is involved in agriculture in some areas in the North of Haiti such as "Plaine du Nord, Lory, Haut du Cap". Their main activities are in food transformation by making cassava bread, chocolate, and peanut butter. Now, they are in the process to build a poultry in the locality of Lory.

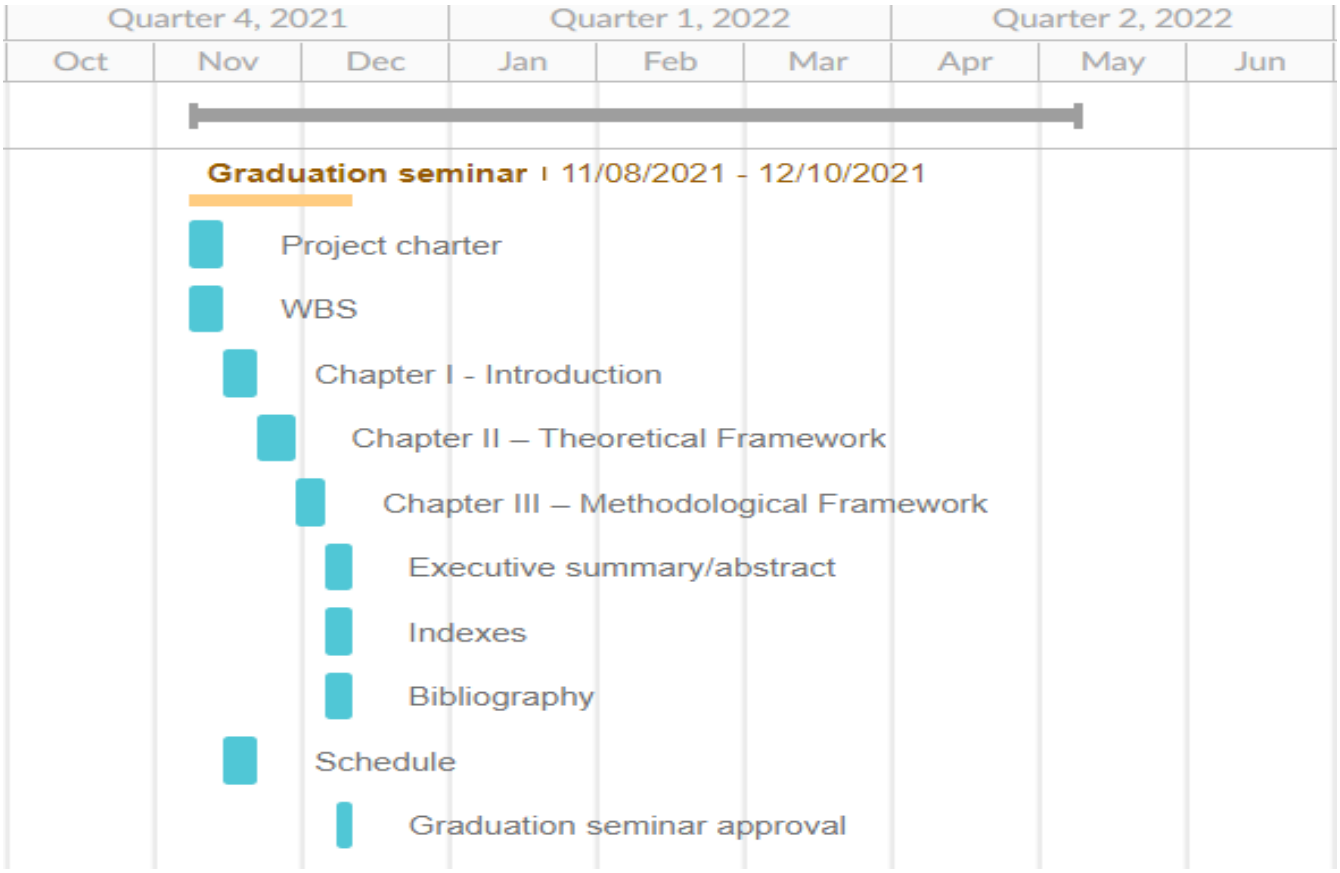
Stakeholders	
Direct stakeholders: - Project Manager, - The company "LES ENTREPRISES IDEALE", - Tutor - Reviewers **Indirect stakeholders:** - Lory's population, - Project Management Experts	
Project Manager: **Edwenson Toussaint**	**Signature:** 
Authorized by:	**Signature:**

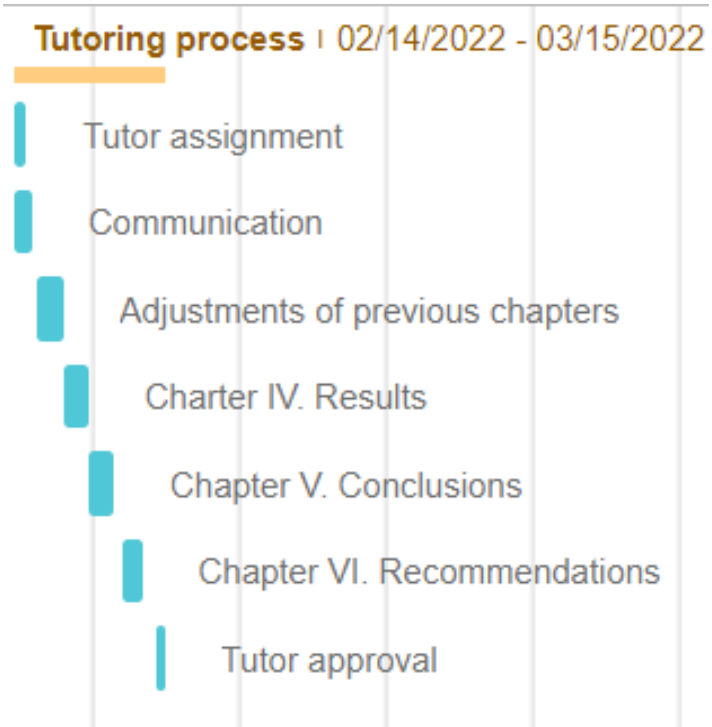
Appendix 2: FGP WBS (created with Google draw)

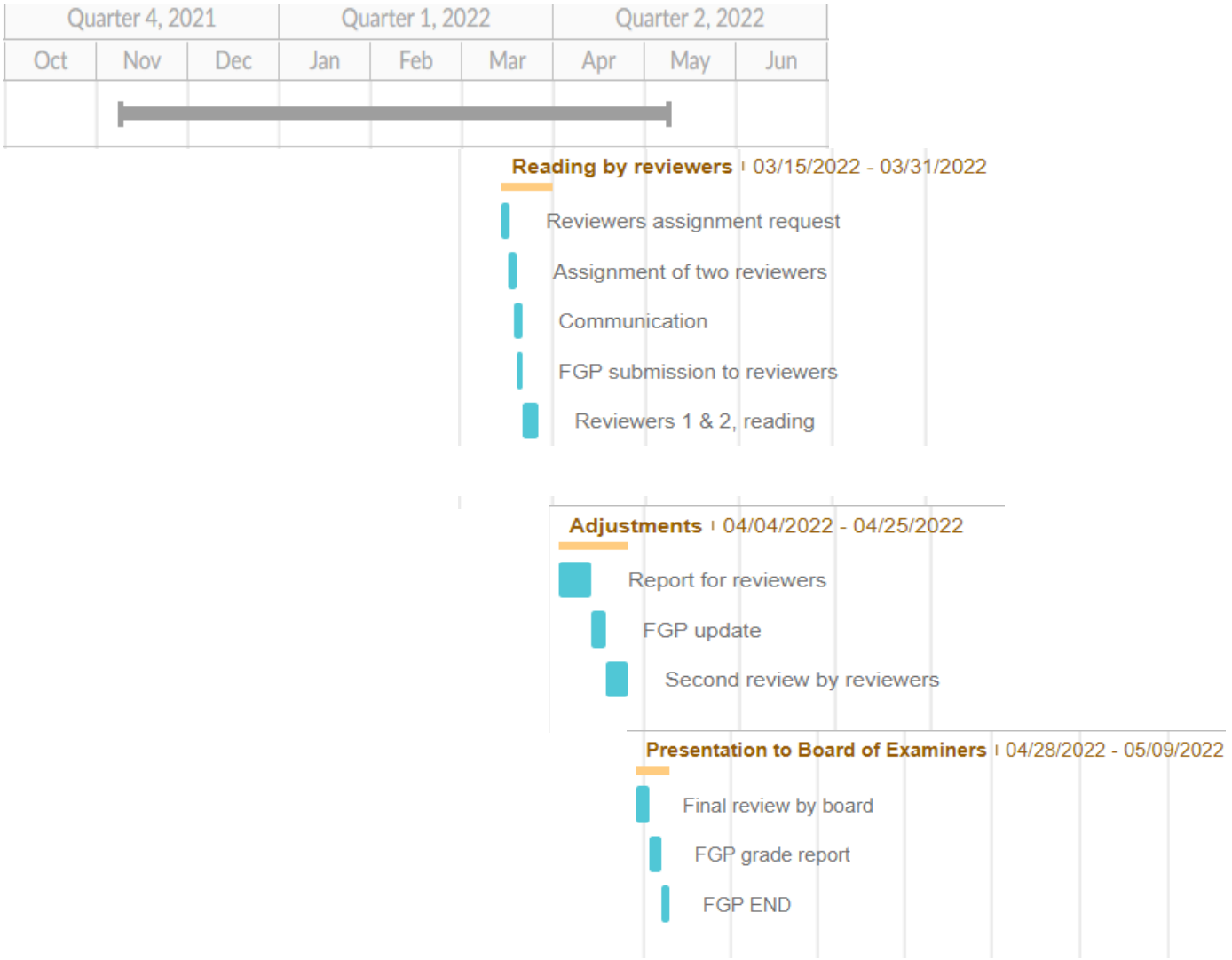


Appendix 3: FGP Schedule & GANTT chart (created with GANTTPRO)

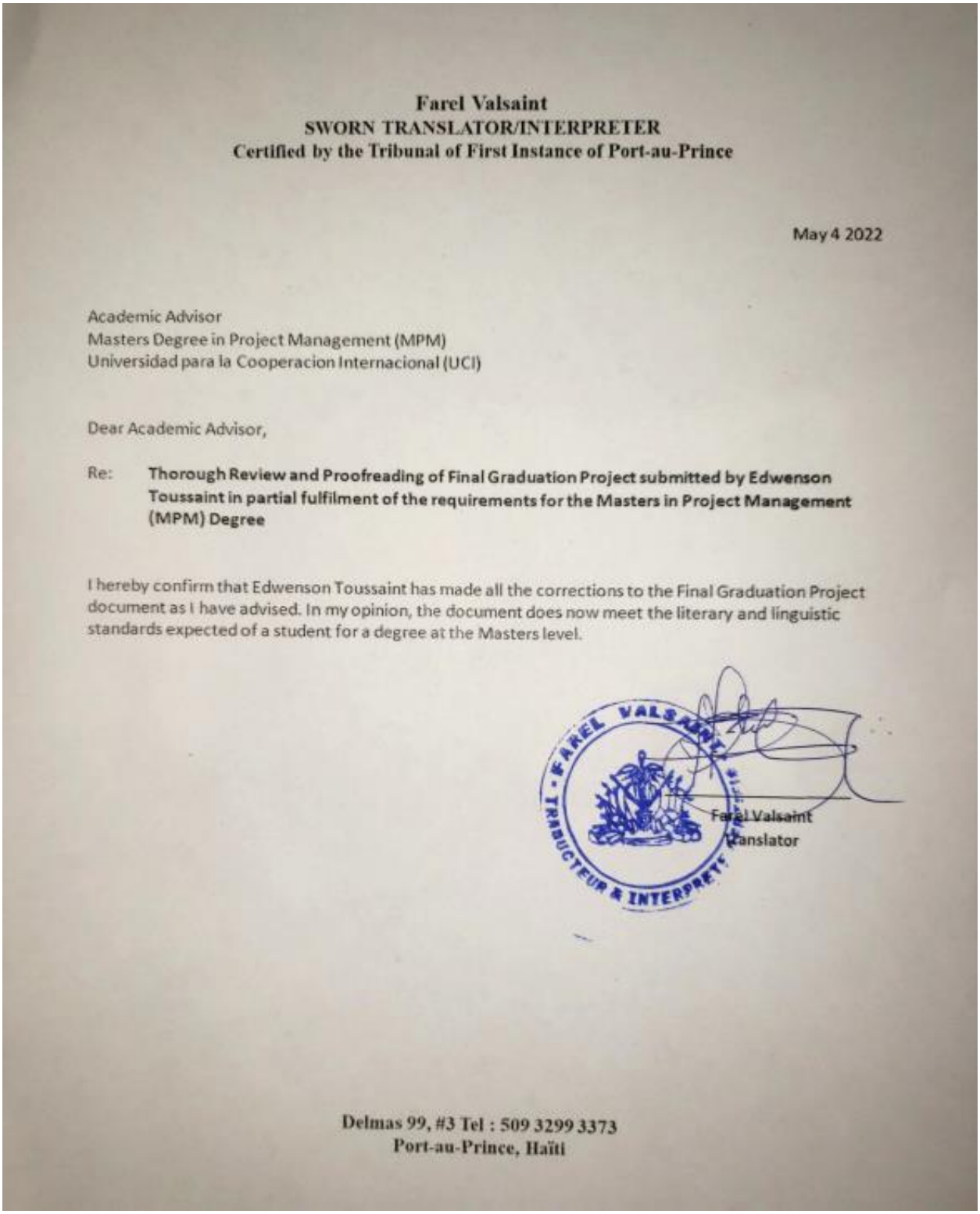
FINAL GRADUATION PROJECT _ EDWENSON TOUSSAINT					
Duration : 114 days					
WBS Number		Task name / Title	Planned start date	Planned end date	Duration (Days)
1		**Graduation seminar**	**11/8/2021**	**12/10/2021**	**33**
1.1		Project charter	11/8/2021	11/14/2021	7
1.2		WBS	11/8/2021	11/14/2021	7
1.3		Chapter I - Introduction	11/15/2021	11/21/2021	7
1.4		Chapter II – Theoretical Framework	11/22/2021	11/28/2021	7
1.5		Chapter III – Methodological Framework	11/29/2021	12/5/2021	7
1.6		Executive summary/abstract	12/6/2021	12/10/2021	5
1.7		Indexes	12/6/2021	12/10/2021	5
1.8		Bibliography	12/6/2021	12/10/2021	5
1.9		Schedule	11/15/2021	11/21/2021	7
1.10		Graduation seminar approval	12/8/2021	12/10/2021	3
2		**Tutoring process**	**2/14/2022**	**3/15/2022**	**30**
2.1		Tutor assignment	2/14/2022	2/15/2022	2
2.2		Communication	2/14/2022	2/16/2022	3
2.3		Adjustments of previous chapters	2/18/2022	2/22/2022	5
2.4		Charter IV. Results	2/23/2022	2/27/2022	5
2.5		Chapter V. Conclusions	2/28/2022	3/4/2022	5
2.6		Chapter VI. Recommendations	3/7/2022	3/10/2022	4
2.7		Tutor approval	3/14/2022	3/15/2022	2
3		**Reading by reviewers**	**3/15/2022**	**3/31/2022**	**17**
3.1		Reviewers assignment request	3/15/2022	3/17/2022	3
3.2		Assignment of two reviewers	3/17/2022	3/19/2022	3
3.3		Communication	3/19/2022	3/21/2022	3
3.4		FGP submission to reviewers	3/20/2022	3/21/2022	2
3.5		Reviewers 1 & 2, reading	3/22/2022	3/26/2022	5
3.6		Reviewers 1 & 2, report	3/27/2022	3/31/2022	5
4		**Adjustments**	**4/4/2022**	**4/25/2022**	**22**
4.1		Report for reviewers	4/4/2022	4/13/2022	10
4.2		FGP update	4/14/2022	4/18/2022	5
4.3		Second review by reviewers	4/19/2022	4/25/2022	7
5		**Presentation to Board of Examiners**	**4/28/2022**	**5/9/2022**	**12**
5.1		Final review by board	4/28/2022	5/2/2022	5
5.2		FGP grade report	5/3/2022	5/6/2022	4
5.3		FGP END	5/7/2022	5/9/2022	3


Quarter 4, 2021
Quarter 1, 2022
Quarter 2, 2022
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Graduation seminar | 11/08/2021 - 12/10/2021
Project charter
WBS
Chapter I - Introduction
Chapter II – Theoretical Framework
Chapter III – Methodological Framework
Executive summary/abstract
Indexes
Bibliography
Schedule
Graduation seminar approval


Tutoring process | 02/14/2022 - 03/15/2022
Tutor assignment
Communication
Adjustments of previous chapters
Charter IV. Results
Chapter V. Conclusions
Chapter VI. Recommendations
Tutor approval


Quarter 4, 2021
Quarter 1, 2022
Quarter 2, 2022
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Reading by reviewers 03/15/2022 - 03/31/2022
Reviewers assignment request
Assignment of two reviewers
Communication
FGP submission to reviewers
Reviewers 1 & 2, reading
Adjustments 04/04/2022 - 04/25/2022
Report for reviewers
FGP update
Second review by reviewers
Presentation to Board of Examiners 04/28/2022 - 05/09/2022
Final review by board
FGP grade report
FGP END

Appendix 4. Philologist credentials



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

May 4 2022

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

Dear Academic Advisor,

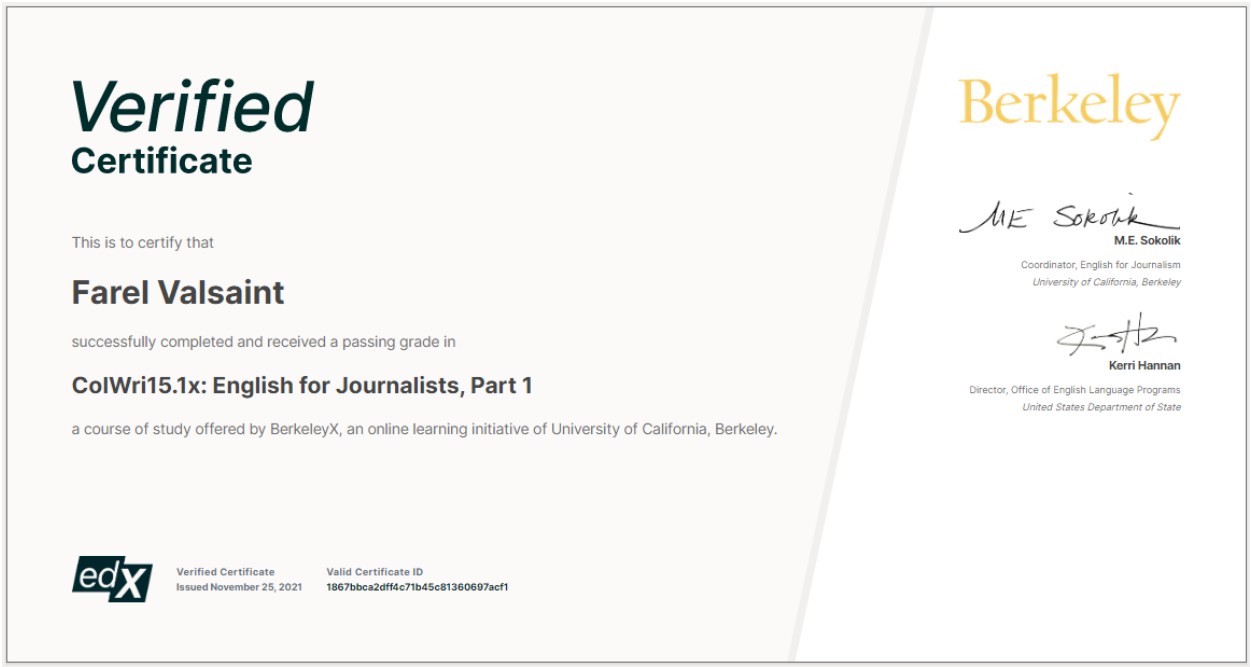
Re: **Thorough Review and Proofreading of Final Graduation Project submitted by Edwenson Toussaint in partial fulfilment of the requirements for the Masters in Project Management (MPM) Degree**

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

FAREL VALSAINT TRADUCTEUR & INTERPRETE

Farel Valsaint
Translator

Delmas 99, #3 Tel : 509 3299 3373
Port-au-Prince, Haïti



Verified
Certificate

This is to certify that

Farel Valsaint

successfully completed and received a passing grade in

ColWri15.1x: English for Journalists, Part 1

a course of study offered by BerkeleyX, an online learning initiative of University of California, Berkeley.

Verified Certificate
Issued November 25, 2021

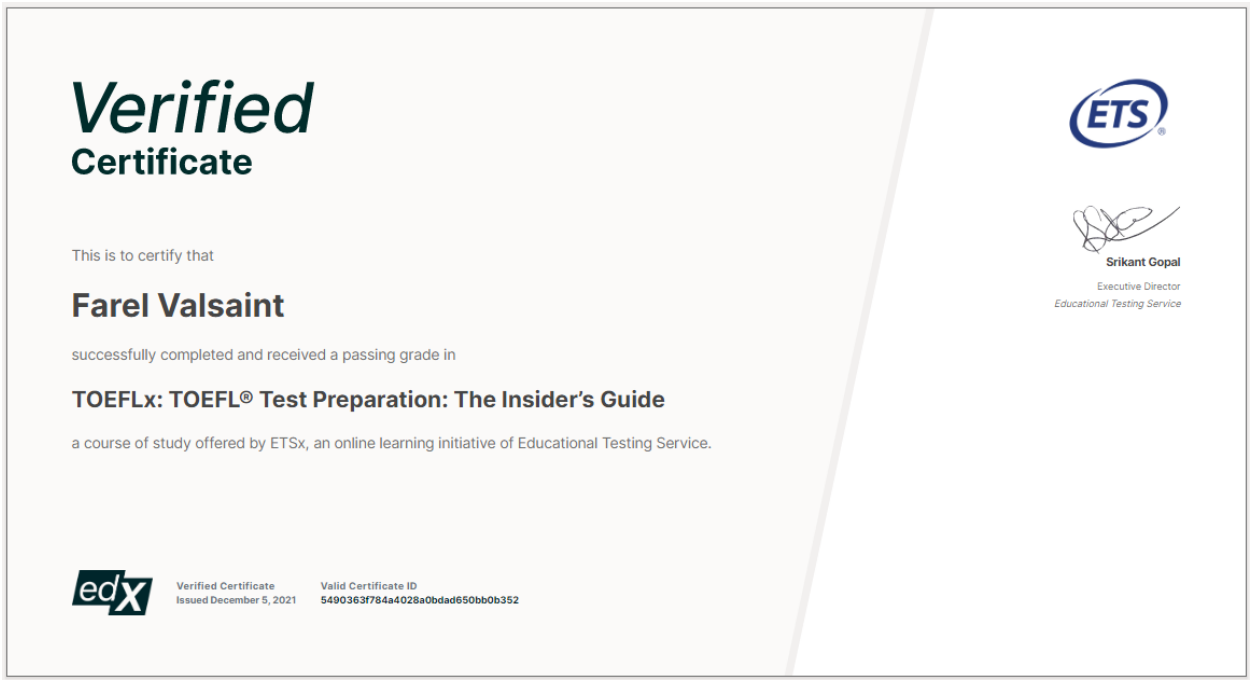
Valid Certificate ID
1867bbca2dff4c71b45c81360697acf1

Berkeley

M.E. Sokolik
Coordinator, English for Journalism
University of California, Berkeley

Kerri Hannan
Director, Office of English Language Programs
United States Department of State

https://courses.edx.org/certificates/1867bbca2dff4c71b45c81360697acf1



Verified
Certificate

This is to certify that

Farel Valsaint

successfully completed and received a passing grade in

TOEFLx: TOEFL® Test Preparation: The Insider's Guide

a course of study offered by ETSx, an online learning initiative of Educational Testing Service.

Verified Certificate
Issued December 5, 2021

Valid Certificate ID
5490363f784a4028a0bdad650bb0b352

Srikant Gopal
Executive Director
Educational Testing Service

https://courses.edx.org/certificates/5490363f784a4028a0bdad650bb0b352

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Haitian-American Institute

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haipaph@gmail.com • www.haitian-americaninstitute.org

OFFICIAL REPORT

Test : Michigan English Placement Test
Center : Haitian-American Institute
Name : **VALSAINT, Farel** Date: **April 12, 2016**

Test Form	Listening Grades Over 20	Grammar Grades Over 30	Vocabulary Grades Over 30	Reading Grades Over 20	Total Grades Over 100
C	20	30	30	15	95

This is to certify that the foregoing is an accurate report of the **Michigan English Placement Test** taken by **VALSAINT, Farel** on **April 6, 2016.**

Irvel FRANCK
Head of the Academic Department