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BUTUAN FIRST AGRO-INDUSTRIAL ECONOMIC ZONE (BFAEZ): A PROJECT FEASIBILITY STUDY

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EXECUTIVE SUMMARY

The year 2019 is an opportune time to develop and operate BUTUAN FIRST AGRO-INDUSTRIAL ECONOMIC ZONE (BFAEZ) pioneered by Terminalia Property Developers Corp. to provide in-demand integrated industrial development in Northern Mindanao Region. The project is a 50 hectares agro-industrial economic zone (AEZ) development that accommodates a 6,500 to 8,000 population which would be located along a busy public road near Masao Port in Butuan City. Blessed by natural wonders, growing population, and a thriving agriculture-based economy, the project proponents saw that the island of Mindanao is ripe for this new industrial development. The core value proposition of the project is to provide excellent, sustainable, and world-class industrial facilities that are able to attract local and foreign businesses to locate in Butuan City. The project is also looking to tap the supply chain of food produce and pharmaceuticals in Mindanao and connect it to its nearby ASEAN markets such as Malaysia, Indonesia, Brunei, Thailand, Vietnam as well as to the biggest economic powerhouses in East Asia: Japan, Korea, and China. Another feature of the project is to build and to lease commercial units that will cater to the need for convenience of the BFAEZ locators. The commercial area is envisioned to have its own three-star hotel, organic community market, retail unit spaces, and thrift or universal banks. The project proponents are expected to tap the domestic and foreign business networks through the increased use of traditional and non-traditional marketing methods.Total estimated revenues from the project is PhP 2.2 billion and the expected return on equity is 32%. The estimated marketing budget is 12% of our total estimated revenues which will fund our marketing efforts. The project’s offering is 32.02 hectares of saleable lots divided in 64 specialized

industrial lots while 2.3 hectares are intended for leasable lots divided in 11 lots combined industrial and commercial lots.

INTRODUCTION

Agro-industries refer to enterprises, activities, and establishments that supply inputs to the farming sector and transform, distribute, and add value to agricultural and food products in response to market demand. These industries play an important role in strengthening agricultural value chains by linking production with processing, marketing, and distribution systems (Food and Agriculture Organization [FAO], 2017). The concept of agriculture as a provider of both food and non-food products has long been recognized, and the rapid development of agro-industrial enterprises has expanded the range of products derived from agricultural resources.

Agro-industries have become increasingly diverse, making classification complex. However, they are generally grouped into categories such as storage, pre- and post-distribution services, packaging and marketing, food and beverage processing, meat processing, fruit processing and preservation, agro-industrial machinery, animal feed production, farm chemicals including fertilizers and pesticides, and pharmaceutical products (FAO, 2020). These industries contribute significantly to economic development by increasing the value of agricultural outputs, creating employment opportunities, and strengthening linkages between agriculture and manufacturing sectors (World Bank, 2020).

OBJECTIVES

This project feasibility study aimed to:

1. Provide adequate knowledge to prospective investors of the demand for Agro-industries as it is a vital factor that drives the economy and to assist in the decision-making in pursuing the project, as it is aimed to provide facilities for these agro-industries to emerge and flourish through this project.
2. Provide reliable information to potential investors to fund initial advances for the first two (2) years of the 50 hectares development with a Joint Venture Partner

OWNERSHIP

The Land owner, Catherine G. Cusi and Terminalla Property Developer Corporation entered into a joint venture agreement. The agreement is for the development of a parcel of land situated in Butuan City with an aggregate land area of 50 hectares. The developer and the owner agreed to convert her land into an agro-industrial subdivision. The said land will be developed by the developer in accordance with the existing rules and regulations or mandates established by the Government. The development shall commence once the property is turned over by the owner.

There would be Joint Venture (JV) agreement which outlines the roles, responsibilities, and financial arrangements between the landowner and the developer in

the development of an agro-industrial economic zone. Under the agreement, the landowner contributes 22% of the required capital while the developer shareholders provide the remaining 78%. The developer has full authority over the management and development of the project, including the preparation of surveys, engineering designs, and development plans in compliance with the requirements of government agencies such as the LGU, DSHUD, Bureau of Lands, and other regulatory bodies. Meanwhile, the owner is responsible for securing the necessary permits, licenses, and approvals, as well as clearing the property of tenants or occupants before turnover. The developer will also coordinate with ANECO for electrical installations, and development will commence once the property is peacefully transferred to the developer.

In terms of benefits and obligations, the landowner will receive compensation in the form of 98.3% developed lots and 1.6% cash payment, while all proceeds from the developed area will accrue to the developer. Roads and open spaces will initially be managed and maintained by the developer before eventual turnover to the local government, although the owner retains perpetual access rights to these areas and to utility connections for adjacent lots. The developer is authorized to handle the sale and collection of proceeds from lot sales, with an exclusive marketing company managing sales at a 12% marketing fee based on net sales. The agreement will remain valid for five years and will terminate once the agreed payment is completed within four years. Any violation of the contract terms entitles the aggrieved party to claim damages and legal costs, and all terms must be formally documented and signed by both parties to be modified.

PROJECT OVERVIEW

Butuan first will become the first PEZA-accredited agro-industrial economic zone in Butuan City. It is aimed to be an ecologically sustainable agro-industrial economic zone in the Philippines.

The total project land area is 50 hectares on initial. Another 50 hectares is reserved for future development. This project will be developed & managed by Terminalia Property Developers Corp. (TPDC)

THE PROJECT LOCATION

Butuan City is a highly urbanized city located in the Caraga Region in northeastern Mindanao. Covering a land area of approximately 816.62 square kilometers, the city had a population of about 337,000 people and around 75,000 households as recorded in 2015. Classified as a first-class income city, Butuan generated an annual revenue of about ₱1.5 billion in the same year, reflecting its growing economic capacity and development. It also serves as the regional center of Caraga, functioning as a hub for government services, commerce, education, and transportation in the region. Historically, Butuan holds great cultural significance as it was once the center of the ancient Rajahnate of Butuan, an early trading polity that flourished long before Spanish colonization. The city played an important role in regional and international trade with neighboring Asian civilizations, which contributed to its rich cultural heritage. Today, Butuan continues to balance its historical legacy with modern urban development, positioning itself as one of the key economic and administrative centers in northeastern Mindanao.

ECONOMIC OVERVIEW (MACRO ANALYSIS)

Economic Trends

The Philippine agricultural sector has continuously pursued strategies aimed at strengthening its contribution to national economic development and international trade. According to the Philippine Development Plan, agricultural modernization and the development of value-adding industries are key strategies to enhance productivity, improve supply chains, and increase competitiveness in global markets (National Economic and Development Authority [NEDA], 2017).

From 2018 to 2021, development efforts focused on improving agro-processing capabilities and strengthening the connection between agricultural production and manufacturing sectors. These initiatives aimed to promote agribusiness development and enhance value chain integration across agricultural commodities (Department of Agriculture, 2021).

For the period 2023–2028, national economic strategies emphasize the deepening of participation in global value chains, particularly in agriculture-related industries, to expand export opportunities and stimulate rural economic growth (NEDA, 2023). Through these initiatives, agribusiness activities are expected to diversify and significantly increase the value of agricultural outputs, contributing to broader industrial development and inclusive economic growth (Department of Trade and Industry [DTI], 2022).

Economic and Variable Overview

The COVID-19 pandemic significantly disrupted economic activity worldwide, including in the Philippines. Several sectors such as tourism, domestic consumption, international trade, and remittances experienced major declines, slowing the country's previously strong economic growth momentum (World Bank, 2022).

Despite these challenges, several sectors demonstrated resilience. Industrial real estate, logistics, and warehousing services remained operational to support essential industries and the rapid growth of e-commerce during the pandemic (United Nations Conference on Trade and Development [UNCTAD], 2019).

Furthermore, the country's financial system remained relatively stable, with moderate inflation rates and supportive fiscal policies encouraging investment opportunities in industrial development and agribusiness ventures (Asian Development Bank [ADB], 2021). These macroeconomic conditions provide favorable prospects for agro-industrial projects such as the proposed Butuan First Agro-Industrial Economic Zone.

Industrial Boost from E-Commerce

The COVID-19 crisis accelerated the growth of e-commerce and digital commerce platforms in the Philippines. This transformation created new demand for logistics facilities, cold storage warehouses, and distribution centers that support food supply chains and agricultural product distribution (World Bank, 2023).As consumer behavior shifts toward online purchasing and digital marketplaces, the need for efficient storage, packaging, and transportation infrastructure continues to increase, particularly in emerging regional hubs outside Metro Manila.

Recovery

Agriculture remains one of the most essential sectors of the Philippine economy. It includes crop production, livestock farming, forestry, and aquaculture, all of which contribute significantly to domestic food supply and export revenues (Philippine Statistics Authority [PSA], 2022).

Agricultural commodities such as rice, corn, coconut, fruits, and aquaculture products play an important role in sustaining both local consumption and international trade. Over the years, increasing land cultivation and improvements in farming technologies have contributed to the gradual growth of agricultural productivity (PSA, 2023).

Strengthening agribusiness value chains and improving post-harvest infrastructure are considered crucial steps toward enhancing agricultural competitiveness and achieving long-term economic transformation (World Bank, 2018).

Furthermore, in some areas like in Dagupan City The Department of Trade and Industry (DTI) - Pangasinan has recorded 625 agri-businesses with registered business names last year, up by a whopping 120 percent from the 284 in 2019. This bodes well for the Butuan First Project.

The country also has low inflation and a liquid financial system allowing for significant possibilities in investment and growth of companies such as the locators of Butuan First as well as for the fund-raising of Butuan First.

SITE AND LOCATION (MICRO ANALYSIS)

Location Accessibility

The Project is strategically located at North-East of the current Butuan International Airport along Butuan-Masao Port road in Barangay Ambago. It has access to manpower, utilities, and various essential infrastructures. The site is only 6.8 km from the Airport and would only take a 12 min drive while is only 6.7 km away from Masao Port the gateway port of Butuan City. This makes the site a very strategic location of various locators as it is easily accessible for both people and goods.

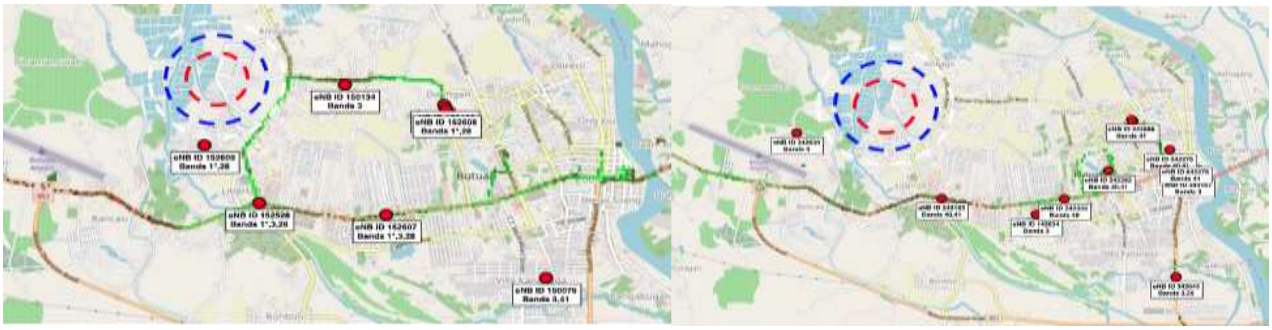
Location Assessment

The location assessment of Butuan City using the STEP (Social, Technological, Economic, and Political) analysis highlights several factors that support its development potential. Socially, Butuan has a population of about 337,000 with a 1.28% annual growth rate, while the Caraga Region has a population of over 2.5 million. The region is linguistically diverse, with Cebuano and Surigaonon as the most widely spoken languages, followed by Butuanon and other dialects, while most residents also understand Filipino and English. The region has a balanced sex ratio, relatively high life expectancy, and a very high literacy rate, with over 99% for both males and females. Technologically, development plans include the use of modern infrastructure such as solar streetlights and

panels, underground utilities, water treatment systems, modular sewage treatment plants, rainwater harvesting, and enhanced security and safety systems. Economically, the region shows steady growth, with a national GDP growth rate of 6.2% in 2018 and a Gross Regional Domestic Product of ₱194 billion for Caraga, growing annually at 7.5%. The labor force stands at around 1.9 million with a high employment rate of 96%, although underemployment remains at 21.4%. The region also benefits from a relatively low inflation rate of 2.2% and a low cost of living, though minimum wages remain among the lowest in Mindanao. Politically, the region maintains generally stable local and regional governance, although insurgency issues still pose challenges to infrastructure development and investment. Business operations are regulated under national policies such as the TRAIN Law and PEZA incentives, and clear labor contracts are recommended to navigate regulatory and operational complexities.

Telecommunications & Utilities Infrastructure

There are currently no Wireless Telecom infrastructure near the project site, and Butuan First will be inviting the top telcos in setting up Cellular Sites in order to boost the availability and speed of wireless communication such as 4G and 5G. Initial tests currently show an average speed of mobile internet in the area already but in order to absorb the number of workers and businesses in the area, significant upgrades are necessary. There are currently no hospitals in the immediate vicinity of Butuan First's site, however 8 hospitals are within 15 mins driving distance of the site. The estate management company will have an emergency vehicle on standby in order to help any emergency situations.



Agusan Del Norte Electric Cooperative (ANECO) has a substation that is 4km away from Butuan First's location while National Grid Corporation of the Philippines (NGCP) has a substation 7m from the site location. Connecting to ANECO will require an upgrade of 20 MVA capacity to cater to Butuan First's Load and will cost around 32 Million Pesos while connecting to NGCP will require no upgrade from the facility of NGCP but will cost 87 Million Pesos. Although the ANECO connection is cheaper, the cost of the substation upgrade is not included in that cost. Both options also contain an back-up emergency diesel generator that costs roughly 6.5 Million Peso.

Geological Hazards

According to the Geohazard map of the Department of Environment and Natural Resources' (DENR) Mines and Geosciences Bureau (MGB) is that the location is highly prone to flood due to its low height relative to the sea level. As the area is also a site along the river, it is also prone to flash flooding from upload areas. The flooding can reach a height of 2meters and can take more than 3 days to subside due to its topography. Butuan First's site is not near any fault line, the nearest fault line is roughly 10.6 kilometers away. However, due to the site being on top of an old marsh, the land is susceptible to liquefaction (where the land sinks significantly) if ever a strong enough earthquake occurs nearby. Butuan First is not susceptible to any volcanic hazards as the nearest volcano is active volcano is not only 95 kilometers away but also on an island has not seen any major activity in recent years.

Land Use

Currently Butuan is still developing its Land-Use Map for release soon that will cover 2023 onwards, its last approved Land-Use map was dated in 2002. In the 2002 Land-Use Map the site is a combination of Bare-soil, Fishpond, Coconut Plantation and

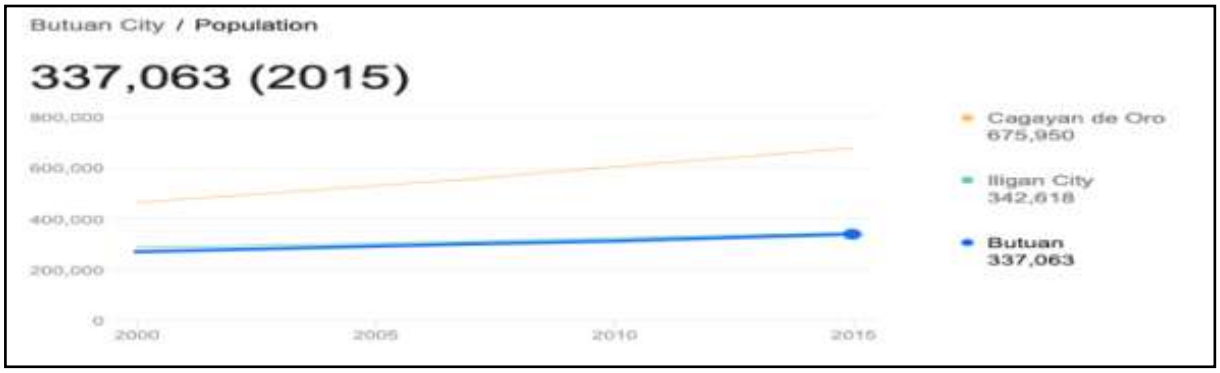
Partial Grassland. As Butuan is currently developing its new land-use map, converting the site location to industrial will be integrated into the current Land-Use updating process.

Aerial View

Drone Image shows the highlighted area of where the project will be located. The property has a large frontage allowing multiple access points as well as for future commercial development that will cater to the locators of the Butuan First.

Population

According to the 2015 Census of Population and Housing, Butuan City had a population of approximately 337,063 people, making it one of the major urban centers in northern Mindanao (PSA, 2016). The Caraga Region also demonstrates high literacy rates and a relatively young labor force, which provides a strong human resource base for industrial and agro-industrial development (NEDA–Regional Development Council XIII, 2017). A young and educated population is considered a significant advantage for agro-industrial projects, as it ensures the availability of skilled labor for manufacturing, logistics, and research-based agricultural enterprises.



PRODUCT RESOURCES

Major Products in the Region

Major agricultural products of the region include palay, corn, coconut, gold, banana, rubber, oil palm, calamansi, prawns, milkfish, crabs, seaweeds and mango. Caraga's proximity to Cebu and Manila makes it a favorable shipping point for products to and from these markets. Nasipit Port can serve as a secondary shipping hub to Cagayan de Oro when traffic volume from other points in Mindanao increases. With a roll-on, roll-off (RORO) ferry service now in place, Butuan City and Surigao City serve as a vital transportation link for trucks and buses bound for Luzon.

Agusan del Norte	Agusan del Sur	Surigao del Norte	Surigao del Sur	Dinagat Islands
rice, coconut, corn, mango, bananas, palm oil, vegetables, and prawns	gold	Ironwood, nickeliferous laterite ore, gold, chromite, lode ore, and laterite ore; limestone, silica deposits, guano, rock phosphate, sand, and gravel; chromate; Marlin, tuna, lapu-lapu, mollusks, crabs, even squid, stingrays, and octopuses	palay, corn, coconut, abaca, soybeans, coffee, and other high value crops; prawns, milkfish, and crabs; are Narra, red and white Lauan, Mayapis, Almon, Apitong, Yakal, Bagtikan, Tanguile, Rattan and Bonbon	seafood, coconut and other lumber products, mines

SWOT ANALYSIS

Strength of the group, that is comprised of multigenerational entrepreneurs and inventors that focus on food security, food technology through agro-industrial development and operations. The group has tap reliable local partner that owns approximately 100 hectares of land and involved to food processing in Northen Mindanao.

Weakness of the group, is being new player in the real estate industry, particularly in the industrial segment and has limited funds in the early stage of development.

Opportunities are taken by the moratorium on new PEZA economic zones in Metro Manila, thus the project site is favored for accreditation. With high demand for industrial spaces, especially PEZA-accredited ones, making the project is viable. Growing population, regional and national economies during 2019. More investments to the Philippines due to favorable macro fundamentals. Expansion of Masao Port became desirable for logistics and mobility of the products. Completion of PPP and Build, Build, Build projects around Butuan City. Declining of crime rate in Butuan, that improves public safety and security.

Threats are considered such as changes in fiscal incentives due to the Tax Reform for attracting better and high quality opportunities (TRABAHO) Bill. Presence of insurgencies or local terrorist threats not only Butuan City but also in Caraga Region and whole of Mindanao.

MARKETING ASSESSMENT

Market Analysis & Forecast

The strategic location of Butuan City as a transportation and logistics hub strengthens its potential as a center for agro-industrial development. Special economic zones and industrial estates have been widely recognized as effective mechanisms for promoting investment, industrialization, and export-oriented growth (UNCTAD, 2019).

The Philippine Economic Zone Authority (PEZA) has played a crucial role in attracting foreign and domestic investors by offering fiscal incentives and regulatory support for businesses operating within economic zones (PEZA, 2021). In recent years, investment activity within economic zones has expanded significantly, reflecting strong investor confidence in the country's industrial development strategy (PEZA, 2022).

In addition, the Philippine Investment Priorities Plan identifies agro-processing, logistics, and infrastructure development as priority investment sectors that can stimulate regional economic growth and employment generation (Board of Investments, 2022).

International & Local Linchpin Tenants

Butuan First are targeting international firms who are looking to expand in the Philippines and leverage opportunities in the Caraga Region. In processing raw materials into higher value products for export or for further processing. Research facilities and service center for international companies will also be targeted Butuan First will target local businesses who already have business in the region or opportunities to expand their existing businesses into the region as feedstock source and high value manufacturing.

Commissaries

The Philippines has a strong restaurant and fastfood industry, Butuan First will attract commissaries to be as close to the farm as possible, reducing costs and maximizing profit.

Institutions and Support Organizations

First Butuan will provide facilities and business opportunities for institutions and support organizations such as property and facilities managers, logistics, banks, telecoms, traders, NGOs, contractors and suppliers

Supply, Demand & Project Absorption

Asking rents are expected to buck the trend and grow at an annual rate of 5% despite moderate increase in vacancy rates estimated over the mid-term due to continued global supply chain disruptions and shutdown of several manufacturing facilities.The renewed opportunities brought by the pandemic in the areas of e-commerce, food and groceries and other essentials are seen to maintain prospects in the industrial segment.The anticipated passage of the Corporate Recovery and Tax Incentives for Enterprises (CREATE) into law is seen to generate positive sentiments among investors. CREATE is expected to boost the country's competitiveness against ASEAN peers by reducing Corporate Income Tax (CIT) from 30% to 20%.

In the post-pandemic era, the opportunities in cold chain logistics market will be sustained by the growing middle class and promising economic development in the Asia-Pacific region. In the Philippines, the Institute of Grocery Distribution forecasts the country's grocery market to exhibit a CAGR of 8.9% from 2018 to 2023.

The anticipated mass vaccination program entails large-scale demand for cold storage warehouses. The country currently lags behind cold storage capacity at only 0.037 cubic meters per urban resident compared to Japan (highest in Asia Pacific) at 0.315 cubic meters per urban resident, US at 0.490 cubic meters per urban resident and the UK at 0.441 cubic meters per urban resident. As urbanization and creation of new urban centers is growing, it creates more room for investment opportunities in the cold market storage in the country.

Marketing Strategies

To effectively market the development to potential locators, Terminalia will employ the different strategies. The marketing strategy for the project includes several launching and promotional activities designed to attract investors, buyers, and real estate practitioners. Initial efforts include roadshows and sales kick-off events that present the project's investment potential, sales projections, and development plans through multimedia presentations and discussions. Roadshows are scheduled in major domestic and international locations such as Cebu, Davao, China, and Japan, while sales kick-off events will be conducted in Mandaluyong, Cebu, Davao, and Butuan to engage marketing professionals and real estate brokers. In addition, regular product knowledge seminars will be held for in-house marketing staff and accredited agents through online sessions and site tours to strengthen their understanding of the project and improve their credibility when dealing with potential clients.

The company will also promote the project through trade fairs, expos, and exhibits related to agriculture and industry, as well as through traditional and digital media. Print media strategies include billboards placed in strategic locations and brochures containing project details, lot offerings, and pricing, all in compliance with national advertising standards and local regulations. Meanwhile, digital marketing efforts will focus on maintaining a comprehensive company website that provides detailed project information and support services. Search engine optimization (SEO) and social media platforms such as Facebook, LinkedIn, Twitter, YouTube, and Instagram will also be used to increase online visibility, promote virtual tours, and respond to customer inquiries, thereby expanding the project's reach to a broader audience.

DEVELOPMENT CONCEPT & MARKET FIT ANALYSIS

Planning Concept

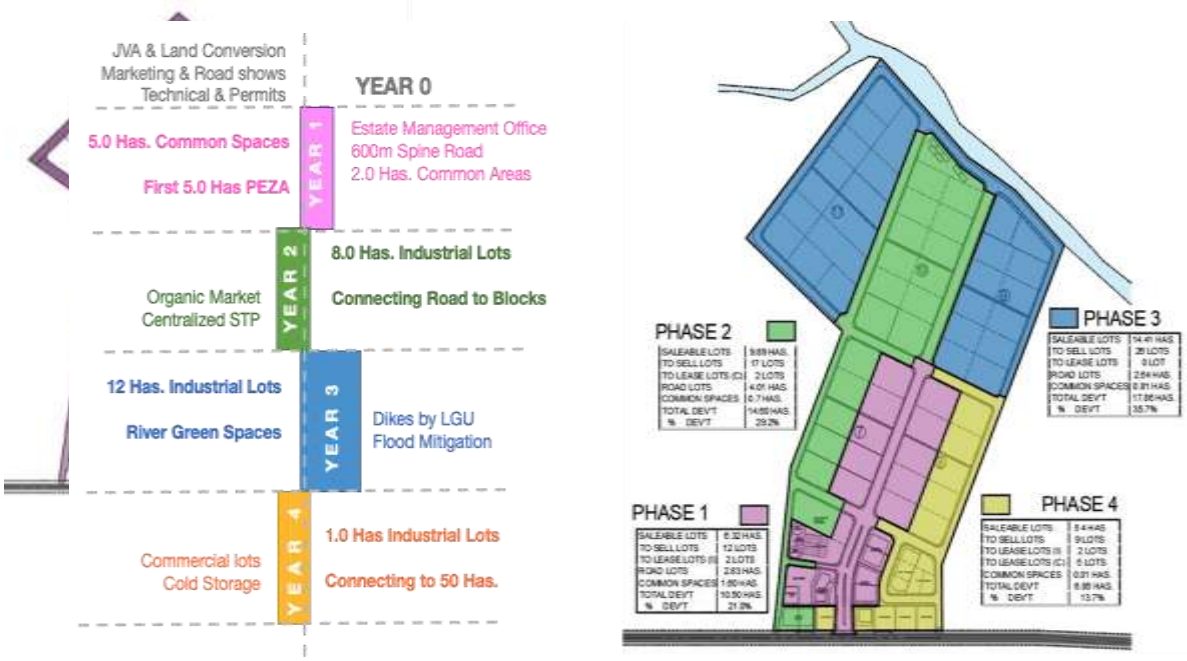
The basic concept of BFAEZ rests on two concepts which are interconnected. The first is the planning concept of Co-location, which give the said region a unique identity by bringing different business models and usage that intertwine to create economic eco system.

The second planning concept is the introduction of Biophilic, techniques and materials that mimic natural organism like animal and plants' attributes that produces concepts to reduce negative environmental impacts and contribute to the reduction of energy consumption, lower emissions of greenhouse gases, reduce water consumption and other environmental impacts. Butuan First's first phase development will have all the necessary facilities in order to facilitate the operations of the locators which includes water treatment, waste water treatment, power distribution and solid waste facilities.

Butuan First will be adopting a phased development strategy starting with roughly 50 hectares in the 1st Phase and then additional 50 hectare development over the next 10 years depending on market conditions.

Development Phasing & Strategies

Phase 1 development positioned to activate the project by establishing marketing stage to highlight a detailed and technically aspiring components in creating eco-park by providing strong spine road that connect the main road to the center of the site. Wide roads with arcaded entry gateway will frame the ingress and egress. The first five hectares of industrial lots would suffice the minimum requirement of PEZA of area coverage, along with Estate Management Office. Phase 2 development will allocate almost 60% utility zone such as electrical yard, modular sewage treatment plant, water treatment plan and the like to address upcoming loading capacity of the project by installing second access to site from public road. This road can provide vista on the upcoming industrial blocks. Community Market that highlights agricultural organic products and local wholesalers.



Phase 3 development will benefit on the LGU's initiative to riprap works along the edge of river channel at the rear side of the eco-park. Perimeter road with green belt will act as river easement for prevailing water code compliance. Numerous Industrial lot are laid for non-PEZA enterprises on this section of the site.

Phase 4 development will complete the significance of this project by allocating cold storage facilities for PEZA and non-PEZA. Commercial strip can attract local retailers and food chains to support the growing business inside the eco-park

Plans & Infrastructure

The BFAEZ is located along Butuan-Masao Port road, which connects Butuan City proper and newly opened Masao Port. Along this four laned road, are establishments and services that fit to the project's progress and support. In the first phase the construction of a 600 meters spine road that connects to industrial lots intended for PEZA compliance of minimum of 5 hectares for this specialized industrial project. Initial public parking lot is planned, that contributes to build up initial critical development of the project. In the second phase, another road that streams for the lot frontage connect the access to Sewage treatment plant and numerous industrial lots for PEZA and non PEZA. Third Phase will cover the river easement road and connects blocks 11 and 9 and eventually preparing to next 50 hectares development. Fourth Phase will connect the loop to the location of cold storages and few numbers of industrial lots. All intersection treated smoothly that transition to straight lanes with 3.85 meters wide on each lane. Sidewalks laid along the length the road with consistent width of 1.5 meters after curbs and gutter and minimum 1.5 meters tree planting strips to define the road right of way and property.

Supply of drinking water for the buildings will be provided from the water treatment plant, which will also serve as a hydrant network. Individual buildings will be outfitted with waterworks plumbing with external water-meter shafts on individual parcels.Drinking water will be used for those purposes for which rain water from roofs or appropriately treated meteoric water cannot be used because of the negative chemical influenced or hygiene hazards (used primarily for drinking, washing and cleaning). Purified rain water from the collection network will be used for other purposes (road surface cleaning, irrigating trees and watering external green surfaces). For this purpose, network systems for collecting and distributing rain water will be store temporarily in series of interconnected cisterns below the open space. The systems will when necessary (during dry seasons when there is no rain water available) have the possibility to use also drinking water upon treatment.

The hydrant network will be an integral part of the public waterworks network that source from cisterns. It will be conducted through communal corridors near traffic or access roads in the form of loops and half-loops on which will be mounted above-ground hydrants. The distance between the hydrants will be approximately 80 m and they will be distributed in a way which enables putting out fire on a building from at least two hydrants simultaneously, taking into account the prescribed distances (max. 80 m and min. 5 m from the building). Each hydrant will be connected to the waterworks network with a slide valve. Those buildings which will have in addition to sanitary drinking water also an internal hydrant network will be equipped with an appropriately dimensioned water connection with a combined water-meter. The points where plumbing connects to the main waterworks will be arranged in a way to enable flow of the loops or half-loops and preventing stagnation of water in junctions.

The modular sewage treatment plant will accommodate the progressive increase of capacity of development. This allow sewage pipe networks can be systematically planned according to phase without creating interruption of operation during upgrade and localized rehabilitation. In view of the terrain’s configuration (plain terrain), the system network will work even without the use of pumping station.

Collecting mixed communal waste is provided by appropriate locations at individual parcels, by transport to a dumping site (in accordance with the municipal regulations). Material Recovery Facility are planned for separate waste (glass, paper, metals, plastic) according to the project needs. In view of the reducing food and agricultural waste, composting with vermiculture facilities are added to the project.

The supply of buildings in the eco park with electric energy will require a medium voltage (MV) 400 kV network which will supply the transformer stations (TS) located in the park according to the needs for energy. In the first phase we plan 3 transformer stations inside the electrical yard, in the second phase another two transformer stations. Transformer stations can be planed as independent unit which supplies more industrial, business and other buildings.. Planning should be adjusted to the Aneco’s standard and guidelines. For low voltage (LV) power supply of buildings the park can put in place cable installation in the corridors planned for communal cables. Reserves of cable cables are planned for the possibility of expanding both the buildings and the park.An Automatic

Transfer Switch will be installed as back up power. When an outage occurs, it transfers power from the utility to the generator which starts up and supplies power to the common areas. When power to the utility is restored, the ATS transfers back to the utility and shuts down the generator. Two (2) sets of 300KVA Generator will be allocated for all four (4) Phases which will power the common utility areas.Due to lower consumption of electric energy and longer life-span, the eco park will have public lighting lamps in LED technology. Lighting of surfaces should be in accordance with the standard or recommendations by the Philippine Standard Institute.

Each building in the eco park will have pipes for telecommunication cables. The layout should be in line with utility easement as marked with other communal utility lines in accordance with the prescribed mutual distances. The telecommunication (TC) network is implemented in accordance with telecommunication providers such PLDT Smart, Globe Telecom and new player Ditto Telecom.The functional ground plan of the building is designed as a basic rectangle with Two floors and roof deck for helipad, approximately 60 x 38 m, intended for administrative services of the PEZA and BOC. The maximal height of the government agency offices floor is 4 m. The ground floor has entrance hall with a reception, lobby and stairs, the communication hall with toilet facilities, pantry and fire stairs, meeting rooms, lecture rooms, service activities, printing shop etc. Second floor will house the developer and operator office floor that can accommodate up to 30 personnel.Product mix, also known as product assortment or product portfolio, refers to the complete set of products and/or services offered by a firm. A product mix consists of product lines, which are associated items that consumers tend to use together or think of as similar products or services. Butuan First offers a mix of PEZA and Non-PEZA Industrial, Cold Storage and Commercial lots.

When looking into industrial property investments especially, there are many considerations to factor into one's process. It's important to know the basics of what helps to determine the valuation of an industrial property. Much like residential real estate, certain things will raise or lower the value of any given property. Understanding what makes these prices fluctuate will help businesses make the smartest business decision.

•Nearby Competition it can help guide your marketing and advertisements and help keep your business relevant in the area.

•Location - Properties that are located nearby bigger cities have a higher demand, as there's less travel distance to and from other business locations and residents.

•Building Structure - The age and condition of the property are also critical to factor into your investment

•Nearby Commercial Real Estate Development - look for signs of a blossoming economy, such as nearby strip malls and other businesses that bring traffic flow to the area.

•Future Opportunities and Development - look into the future at the possibilities including what is up-and-coming in the areas nearby and determining how that might affect your property income.

There are many factors that have an impact on the value of industrial property. Out of the 20 articles analyzed, we found that there are nine factors (15 sub-factors) that will affect the value of industrial property. Nine factors have been categorized into two themes: macro-economic and microeconomic. Seven are macro-economic factors such

as economic, government intervention, industrial agglomeration, transport and infrastructure, technology level, climate variable, environmental contamination. There are two remaining factors for microeconomic factors, i.e. location and physical characteristics. As a result, most authors have studied that the level of technology is the main factor (24 percent) affecting the value of industrial property. We have learned from the study that the location of the property is not the only factor affecting the value of industrial property, but the level of technology and environmental contamination, which are also the main factors affecting the value of industrial property. These factors are useful for estimating the value of property as well as considerations for investors. Further studies are needed to validate the framework. The opinions of industry players and stakeholders as a whole may be used for this purpose.

Competitive Positioning

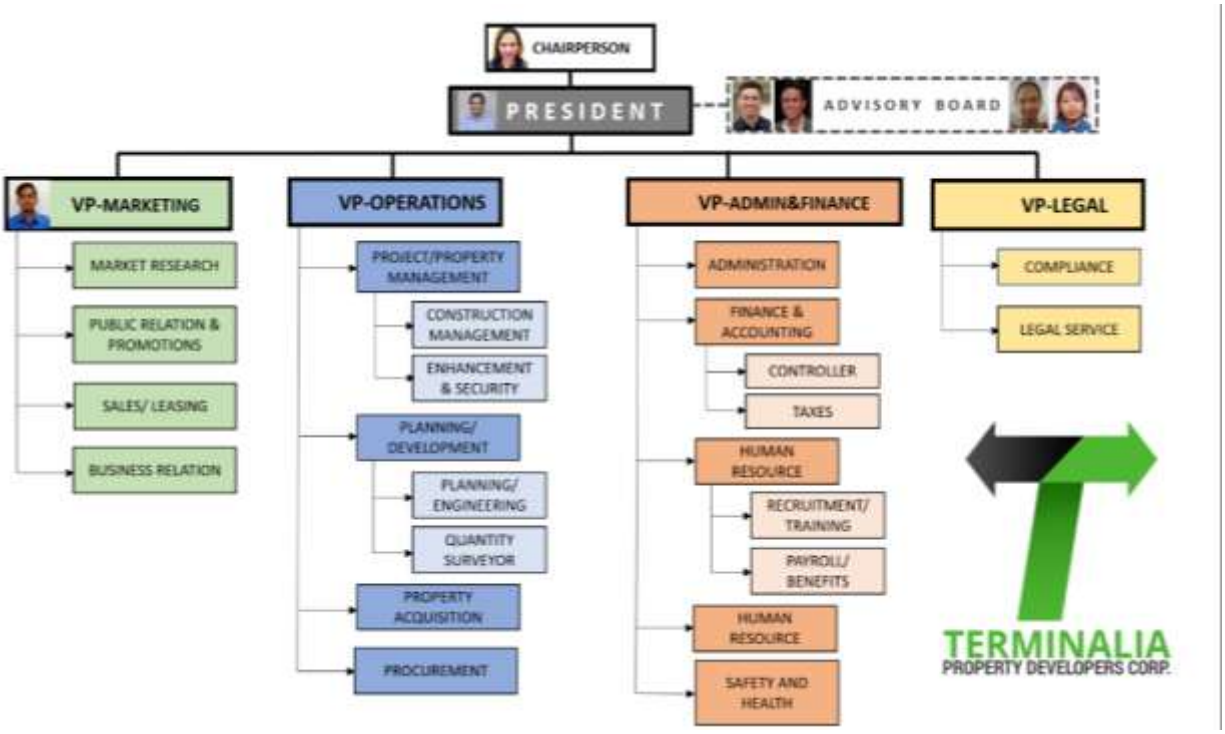
The project has been very well- thought of and well-designed that is anticipated to withstand the threats in the market. Each of these factors have been considered during the project planning phase and counter measures have been drawn up. Keeping abreast on new improvised tools and techniques is the key to being competitive in this rivalrous industry. Time and results are also considered to be very essential in this endeavor.

OPERATIONS

Project Management and Structure

Butuan First management will be simple but will allow cross departmental collaboration to ensure maximized resources, quick implementation of best practices and speed of implementation. There will be multiple cross functions such as Health and Safety, BIM documentation, Disaster Risk and Management as well as ensuring everything is on project schedule as there will be continuous development over the next 15 years. Butuan First will implement Genchi Genbutsu that was promoted by Toyota Chairperson Fujio Cho which translates to applying their management practice in order to ensure quality management that will allow the locators to focus on their business.

Organizational Structure



Manpower Planning

The development of the project will be handled by the Contractor. Project audit and inspections will be done on a daily basis. A lean workforce will be implemented with specific job responsibilities and will be assessed regularly.

Operating Model

Risk Management

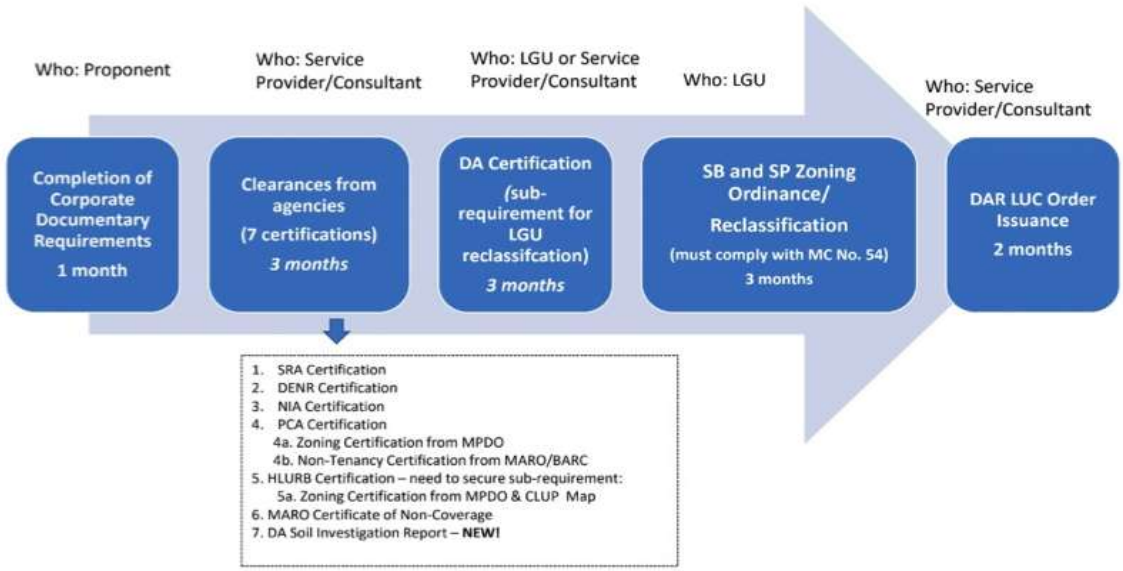
Provisions for the allocation of risk among parties to a contract can appear in numerous areas in addition to the total construction price. Typically, these provisions assign responsibility for covering the costs of possible or unforeseen occurrences.

LEGAL PROCESS

Force majeure (i.e., this provision absolves an owner or a contractor for payment for costs due to "Acts of God" and other external events such as war or labor strikes)	Indemnification (i.e., this provision absolves the indemified party from any payment for losses and damages incurred by a third party such as adjacent property owners.)	Liens (i.e., assurances that third party claims are settled such as "mechanics liens" for worker wages),	Labor laws (i.e., payments for any violation of labor laws and regulations on the job site),	Differing site conditions (i.e., responsibility for extra costs due to unexpected site conditions),
Delays and extensions of time,	Liquidated damages (i.e., payments for any facility defects with payment amounts agreed to in advance)	Consequential damages (i.e., payments for actual damage costs assessed upon impact of facility defects),	Occupational safety and health of workers,	Permits, licenses, laws, and regulations,
Equal employment opportunity regulations,	Termination for default by contractor,	Suspension of work,	Warranties and guarantees.	

Land Conversion Process

Currently the land is considered as agricultural land and thus it has to be converted into industrial. This process is already well known with specialist firms providing this service that Butuan First will engage with.



Compliance

The development of agro-industrial estates in the Philippines is governed by several laws and regulations that ensure proper land development, housing standards, and investor protection. These include the Subdivision and Condominium Buyers' Protective Decree (Presidential Decree No. 957), which regulates the sale of subdivision properties (Republic of the Philippines, 1976).

Land development activities must also comply with the Comprehensive Agrarian Reform Law (Republic Act No. 6657), which governs land ownership and agricultural land conversion processes (Republic of the Philippines, 1988).

Other relevant legislation includes the Urban Development and Housing Act (Republic Act No. 7279), which establishes policies for urban land development and housing programs (Republic of the Philippines, 1992), the Realty Installment Buyer Protection Act (Republic Act No. 6552) that safeguards the rights of buyers in real estate transactions (Republic of the Philippines, 1998), and the Balanced Housing Development Program Act (Republic Act No. 10884) that promotes housing development through public and private sector partnerships (Republic of the Philippines, 2016).

Local Government Initiatives

Butuan City has a very aggressive local government who are pushing several programs to attract investment, ensure strong communities and many more. Butuan City is working with the Taiwanese Government in order to make Butuan City into a smart city.Butuan City is also promoting technology and science start-ups and enterprises. For example The Hacktivists Summit is ButuanOns response to Bloomberg's Global City Mayor's Challenge. This methodology is a modified hackathon designed to generate ideas to address complex problems and challenges of the city in light of the pandemic.

FINANCIAL ANALYSIS

Project Details

The project is proposed by Terminalia Property Development Corporation, with its office located in Butuan City. The project is titled "Butuan First Agro-Industrial Economic Zone – Phase 1" and is situated in Barangay Ambago along the Butuan–Masao Port Road in Butuan City. The development is designed as a land development project for an agri-industrial subdivision, classified as a mixed-use development intended to support agro-industrial activities and related business operations. The project covers a total gross land area of 500,000 square meters. Of this area, 320,200 square meters (64.04%) are designated as saleable lots, while 23,000 square meters (4.60%) are allocated as leaseable areas. In addition, 156,800 square meters (31.36%) are reserved for common and office spaces to support the overall operations and functionality of the development. The total estimated project cost is ₱966,012,727, reflecting the investment required to establish the agro-industrial economic zone and its supporting infrastructure.

Sources of Funds

CAPITAL STRUCTURE

Owner's Equity or Developer's Equity comprises 31% of the total cost. The Lot owner also contributed 31%. The remaining 38% may be availed through bank loan, or capital infusion that can either be paid off or offered in exchange of shares.

Project Cost

ITEM	PARTICULARS		Cost-Sharing	TOTAL
A	OWNERS'S EQUITY		31%	300,000,000.00
B	LAND OWNER	EX-OFFICIO/NON-VOTING	31%	300,000,000.00
C	LOANS		38%	366,012,727.15
	TOTALS		100%	966,012,727.15

The cost of land acquisition is 300M. Majority of the development cost is allocated for the Utilities & Infrastructure which is 28%. Followed by the Management Building and Entry Gateway 12% and Site Development at 10.7%. In total, the development cost would reach up to 68.9% of the total cost.

Cost Distribution by Phase

The project will be implemented in four development phases, each with a corresponding cost and percentage of completion. Phase 1 has an estimated cost of ₱202,862,672.70, representing 21% of the total project development. Phase 2 requires ₱280,143,690.87, accounting for 29% of the overall project cost. Phase 3 constitutes the largest share of the development with a cost of ₱347,764,581.77, which corresponds to 36% of the total project. Finally, Phase 4 has an estimated cost of ₱135,241,781.80, representing the remaining 14% of the project. Altogether, the four phases amount to a total project cost of ₱966,012,727.15, equivalent to 100% completion of the development plan.

Raw Land Payment Schedule

The payment agreement between the Land Owner and the Developer will be based on the progressive project schedule. This is closely aligned to the project development and marketing milestones to ensure the stability of the operations and financials of the project. It is expected that fully payment of the land will be fulfilled on the 4th Year. Please note that an initial payment will issued on Year 0 so as to accommodate the payments for land conversion, transfer and subdivision fees.

Pricing

The project adopts a strategic pricing model designed to attract investors and businesses during its initial market entry while maintaining long-term profitability. At the start, the development offers Non-PEZA lots at affordable and competitive prices to make the project accessible to potential buyers and locators. This approach allows the company to establish its presence in the market, build brand recognition, and generate early interest from investors. As the project gains market traction and the brand becomes more established, the pricing strategy will gradually increase to reflect the added value, improved infrastructure, and continuous innovation within the development.

To determine appropriate pricing levels, the project utilizes several pricing methods. These include competitor pricing, which involves benchmarking against other agro-industrial development projects to remain competitive; market demand pricing, which adjusts prices according to demand trends; cost-based pricing, which ensures that development and operational costs are covered; value pricing, which reflects the perceived benefits and advantages offered to investors; and target return-on-investment (ROI) pricing,

Cash Outflow Projections

Cash Outflows dramatically surge on the 2nd year and remains to increase up to the 3rd year. However, is expected diminish upon nearing the project completion. The contributing factor of the increase is the Development cost.

Expense allocations are based on developed areas and anticipated cost. Majority of the expenses will be incurred by the development of the lots to be sold at 93% and the lots to be leased is at 7%.

Cash outflows attributable to both lot sales and lease sales	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL	PERCENTAGE
Raw Land	5.00	61.95	85.55	106.20	41.30	0.00	**300.00**	22%
Development Costs		139.86	193.14	239.76	93.24	0.00	**666.01**	50%
Marketing Expenses	5.50	50.00	62.00	30.00	21.17	0.00	**168.67**	13%
Other selling costs	5.00	20.00	17.00	15.00	15.00	0.00	**72.00**	5%
Operating expenses	8.00	16.00	18.00	20.00	22.00	22.00	**106.00**	8%
Interest expenses		10.34	10.34	10.34	0.00	0.00	**31.01**	2%
TOTAL	**23.50**	**298.15**	**386.03**	**421.30**	**192.71**	**22.00**	**1343.69**	100%

Total Sales (LOT SALES AND LEASES)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL	PERCENTAGE
Lot Sales	0.00	210.60	387.90	765.16	334.30	43.46	1741.42	81%
Lease Income	0.00	0.00	38.70	38.70	168.96	168.96	415.32	19%
TOTAL	**0.00**	**210.60**	**426.60**	**803.86**	**503.26**	**212.42**	2156.74	100%

Percentage (basis in allocating expenses)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Sale	93%	93%	93%	93%	93%	0%
Lease	7%	7%	7%	7%	7%	100%
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Basis	area usage	area usage	area usage	area usage	area usage	area usage

Income Projections for Sale and Lease

Sales projections for Lots to be Sold will peak on the 3rd year and will gradually decline on the next two (2) years. Contrary to Lots for Lease, the income will start to kick off on the 2nd year paving way for the much anticipated increase on the 4th year due to the completion of the leasable commercial areas. The lease income is projected to increase in the following years until the end of the 20-year tenant contract as it also includes the periodic increment of the lease itself.

Projected Cash Flow on Lot Sales and Lease

There is an anticipated deficit of 89.43M on the 1st and 2nd year of development. However, it is shown on the table that by the 3rd year the Developer has more than enough funds to keep the project afloat.

Sales

The selling activity provides the company with a Net Present Value of 354.82 million, such is considered as the value of the project. This is the present value of the project's free cash flows discounted at the cost of capital or 10%. This tells us how much the project contributes to shareholder wealth. The larger the NPV, the more value the project adds. Moreover, the project's rate of return or IRR particularly in selling activity is 114% while the discounted IRR is determined to be 94%. The IRR is the discount rate that forces the PV of inflows to equal the outflows wherein the NPV is 0. Since the IRR is well above the discount rate used or cost of capital of 10%, the differences of 104% using the IRR and 84% using the discounted IRR will be an additional return or bonus that goes to the firm's stockholders enabling the stock equity to rise. However, it takes 2.21 years (approximately 2 years and 2 ½ months) for an investment's cash flows to cover its costs. Ideally, the shorter the payback period the better, in this case, it is inevitable for the company to take 2 years since the company is experiencing a net cash deficit in year 1 since the company is anticipating high marketing and selling expenses to stimulate sales in the succeeding years.

Lease

Projected Cash inflow on Leasing is expected to have a deficit of 21.63M. However, the projected lease income will surge to 1588% (15.88) on the 4th year.

On the other hand, the leasing activity yields a 5-year projected value of 194.39 million. This is the contribution of the leasing project to the company's shareholder wealth. This amount may be lower than the selling activity's NPV. Moreover, the project's rate of return or IRR particularly in leasing activity is 131% while the discounted IRR is determined to be 110%. Since the IRR is well above the discount rate used or cost of capital of 10%, the differences of 121% using the IRR and 100% using the discounted IRR, will be an additional return or bonus that goes to the firm's stockholders. However, it requires 3.04 years (approximately 3 years and 15 days) to recover the funds invested in a project from its cash flows. This is quite longer than the 2.21 payback period of the selling activity. Anyway, it is appropriate for the company to take 3 years since income from leasing will commence on year 2. This the reason why net cash deficits occur. The company considers setting up and focus more on the selling activity in year 1, it is in the second year that the company would accept leasing agreements to its locators. It should be noted that expenses are to be incurred and reasonable amounts are allocated in the leasing project even on the years 0 and 1.

Discounted NPV and IRR

As seen from the table, the criteria are met by the aforementioned projects, consequently, acceptance of such is permitted. These projects are not mutually exclusive wherein only one is strictly chosen over the other. Both of the projects are now subject to implementation.

SUMMARY OF DISCOUNTED NPV, IRR AND PAYBACK PERIOD	UNIT	AMOUNT/RATE	RECOMMENDATIONS
SELLING ACTIVTY			
NPV	in millions	₱ 354.82	ACCEPTED
IRR		94%	ACCEPTED
PAYBACK PERIOD	in years	2.21	ACCEPTED
LEASING ACTIVITY			
NPV	in millions	₱ 193.39	ACCEPTED
IRR		110%	ACCEPTED
PAYBACK PERIOD	in years	3.04	ACCEPTED
COMBINED NPV	in millions	₱ 548.21	ACCEPTED

Comprehensive Income Statement

TERMINALIA PROPERTY DEVELOPMENT CORPORATION
STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED
In millions

	Notes	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
REVENUES								
Sales		0.00	210.60	387.90	765.16	334.30	43.46	1,741.42
Lease Income		0.00	0.00	38.70	38.70	168.96	168.96	415.32
TOTAL		0.00	210.60	426.60	803.86	503.26	212.42	2,156.74
COSTS								
Raw Land		(5.00)	(61.95)	(85.55)	(106.20)	(41.30)	0.00	(300.00)
Development Costs		0.00	(139.86)	(193.14)	(239.76)	(93.24)	0.00	(666.01)
Marketing Expenses		(5.50)	(50.00)	(62.00)	(30.00)	(21.17)	0.00	(168.67)
Other selling cost		(5.00)	(20.00)	(17.00)	(15.00)	(15.00)	0.00	(72.00)
Operating Expenses		(8.00)	(16.00)	(18.00)	(20.00)	(22.00)	(22.00)	(106.00)
Depreciation Expenses		(1.86)	(1.86)	(2.18)	(2.51)	(3.24)	(3.24)	(14.88)
Interest expense		0.00	(10.34)	(10.34)	(10.34)	0.00	0.00	(31.01)
		(25.36)	(300.01)	(388.21)	(423.81)	(195.95)	(25.24)	(1,358.57)
INCOME BEFORE TAX		(25.36)	(89.41)	38.39	380.05	307.31	187.19	798.17
Income tax (30%)		0.00	0.00	(11.52)	(114.02)	(92.19)	(56.16)	(273.88)
INCOME AFTER TAX		(25.36)	(89.41)	26.87	266.04	215.12	131.03	524.29

Profitability Ratio

As expected the Net Profit Margin, Operating Profit Margin, Gross Profit Margin are at their lowest in the beginning years. In fact, negative percentages are evident in year 1 net profit margin and operating profit margin. Aside from low sales, this would indicate that operating costs and expenses are too high especially in the early years. This causes the average percentages to fall. It is gradually increasing as it approaches the fifth year. Massive production of inventories is anticipated in year 3 and 4. While in year 5, there was no production anymore of disposable property, however, expenses reduced substantially at the same time leasing activity resumes.

Return on financier's investment and return on owner's investment

The return on financier's investment and return on owner's investment have also negative percentages in year 1 and low ratio in year 2 due to the occurrence of net loss and low net income, respectively. However, the aforementioned increase rapidly as the years go by, enabling the average percentages of the aforementioned to improve. The company reaches a somewhat high return, this is essential since financiers and stockholders expect to earn a return on their money, this ratio also helps us to know how well the company is in the accounting sense.

Return on Net Operating Profit

An increasing rate is represented in the first three years, that is in year 1 to year 3. The sudden decline after year 3 may be due to the high cost of sales and can be traced to the decrease of tangible assets since some of them have been sold in the early years.

Asset Turnover

An increasing rate is evident in the first 3 years the highest is in year 3. This may be impacted with the decreasing sales after year 3 which we assumed that the business may have been stabilizing after then. It must be noted that decreasing sales is anticipated on the selling activity and at the same time, the income on leasing activity is improving continuously. Moreover, the tangible assets consisting of inventory decrease year after year while the leased asset will remain because the leased assets are treated as part of the fixed asset.

Return on Assets or Earning Power

Similarly, negative ROA resulted primarily due to net loss wherein sales on year 1 was not enough to cover the related expenses, conservative approach tells us that sales should be lesser in the early years.

Liquidity Ratio

LIQUIDITY RATIOS						
RATIO	Year 1	Year 2	Year 3	Year 4	Year 5	Average
CURRENT RATIO		43.63	5.73	7.66	12.88	17.47
QUICK OR ACID-TEST RATIO		36.68	5.09	7.66	12.88	15.58
LIQUIDITY OF INVENTORIES	1.85	2.95	3.96	no inventories	no inventories	2.92
DEFENSE POSITION (in days)	661	401	573	1643	11969	3050

Current Ratio

A high current ratio would suggest a safe and strong liquidity position. This means that the current assets are bigger than the current liabilities wherein the company can pay the current obligations as it matures.

Quick or Acid-Test Ratio

A high ratio confirms that the company can pay off its short-term obligations without having to rely on the sale of inventories.

Defense Position

The company has a high defensive interval ratio or period of 3050 days as its average from the 5-year projection. This will enable us to know the approximate days the company can go on with its operations without relying on the non-current or long-term assets. Meaning, reliance on liquid or current assets is assumed only. Having said this, the company has a remarkable defense position.

Test of Debt Service

TEST OF DEBT SERVICE						
RATIO	Year 1	Year 2	Year 3	Year 4	Year 5	Average
DEBT-TO-NET WORTH RATIO	1.92	1.67	0.53	0.13	0.07	0.87
TOTAL CAPITALIZATION RATIO	0.62	0.48	0.17			0.42

Debt-To-Net Worth Ratio

Financers would always prefer to have a low debt-to-net ratio so they would prefer to lend money when the need arises. This also subjects the management to a low risk of bankruptcy if it sought to borrow a substantial amount. It is seen in the coming year 5 that a very low ratio would occur and an average ratio is lesser as well. With this, financers would more likely allow the borrowing of money, if the company would do so.

Total Capitalization Ratio

This also confirms the statement above since in year 4 and 5, the long-term liabilities are paid off already. Having said this, only the developers' equity is the main source of funds to generate the continuing operations in those years.

SOCIO-ECONOMIC IMPACT

Agro-industrial development plays a vital role in rural transformation by creating employment opportunities, strengthening agricultural value chains, and increasing demand for farm products. Agro-industries contribute to poverty reduction and food security by generating off-farm employment opportunities and providing farmers with better market access for their produce (FAO, 2017).

In developing economies, agro-industrial parks have been identified as an effective strategy for accelerating industrialization and enhancing agricultural productivity through improved infrastructure, logistics systems, and technology adoption (FAO, 2020).

The modernization of the agricultural sector remains a critical agenda for the Philippines. Strengthening agricultural productivity, promoting private sector participation, and improving infrastructure are essential for achieving sustainable economic growth and global competitiveness (World Bank, 2020).

RECOMMENDATIONS

The introduction of agro-industrial parks presents significant opportunities for industrialization and economic growth in Butuan City and nearby areas. The proposed project is designed to be physically possible, considering the availability and suitability of land for development, and technically feasible through the application of appropriate infrastructure, technology, and development planning. It is also financially viable, with projected returns that support long-term sustainability and investment growth. In addition, the project is legally permissible, as it complies with relevant national laws, local regulations, and requirements of concerned government agencies. Furthermore, the development is planned to be environmentally sustainable, incorporating systems and practices that protect natural resources, and equitable, ensuring that the benefits of development are shared among stakeholders and contribute to inclusive economic progress in the region.

COMPLIANCE WITH ETHICAL STANDARDS

This feasibility study was conducted in accordance with established ethical standards to ensure integrity, transparency, and respect for all stakeholders involved. All information utilized in the study was obtained from credible and legitimate sources, including published reports, government data, and relevant industry references, and proper acknowledgment was given where necessary. The researchers ensured that all data were presented accurately and objectively without manipulation or misrepresentation. Confidentiality and responsible use of information were strictly observed, particularly in the handling of financial, technical, and operational data related to the proposed project. Furthermore, the study adhered to applicable legal regulations, environmental considerations, and professional research guidelines to ensure that the proposed project is socially responsible, environmentally sustainable, and aligned with ethical business practices.

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