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THE PHILIPPINE FOOD AND BIOENERGY PARKS CORPORATION

SUMMARY

The Philippine Food and Bioenergy Park Corporation (PFBPark) is a management and holding company that will establish and operate food and bioenergy parks, food terminal markets, and other support infrastructure and research and development infrastructure related to food and bioenergy. By using the International Food Park model developed by Wageningen University and Research of the Netherlands, the company is the principal stakeholder in the establishment of food park facilities in the Philippines both for the international and domestic markets.

A typical food park spreads over 500 to 1,000 hectares of land that encompass all the aspects of the food supply chain and bioenergy production that facilitate the integration of various agribusiness value chain components with spatial integration of different agro-production chains, processing units, and non-agro functions. Every food park also provides vital scope for economic transformation and employment generation including domestic and international tourism. The food and bioenergy parks being proposed are easily accessible by road, rail, sea, and air.

The PFBPark creates various subsidiary companies using the public-private partnership model. It also serves as the anchor investor to promote foreign investment in the agriculture sector of the Philippines. The holding company is responsible for ensuring the availability of the land area to be devoted to the project in partnership with the local partners, which include local government units, landowners, and other interested parties.

The first main responsibility of the holding company is to organize the funding required for the overall physical development and operating systems through international and local investment. The company also supports the funding requirement and management of possible locators, particularly local business groups and farmers cooperatives that participate by doing business inside the food and bioenergy park.

The food and bioenergy park infrastructure are a financially self-sustaining public-private sector partnership model with various income streams, which include property rental, toll processing, food services and transportation logistics, electricity generation, financial services, tourism, and other products and services.

Classified as an international food park, regional food park, and special food and clean energy park, there are four international food parks, two food terminals to serve the north and south

gateway to Metro Manila, and 12 regional food parks, and one specialized energy park through a collaboration with the University of the Philippines are being proposed. The total cost of a typical international food and bioenergy park project is around 1.5 billion \$US and a regional food park or food terminal cost 200-300 million USD. Every international food park and regional food park, including the specialized park has satellite centers. The total cost is estimated at 11.30 billion USD.

In the Philippines, there is an existing physical infrastructure that can house the structure for agricultural development and bioenergy development. These prominent facilities with ready land and infrastructure include the Subic Bay Freeport Zone (SBF) in Zambales, the Cagayan Economic Zone Authority in Port Irene, Cagayan, and the Zamboanga Economic Zone Authority in Zamboanga City. On the other hand, there is already a need to replace facilities inside Metro Manila to decongest traffic and one in the South to be in Batangas and one in the North to be in Bulacan are proposed food terminal facilities.

BACKGROUND

Focus on Agriculture and Bioenergy for Economic Development of the Philippines

Agriculture is still the Philippines' largest industry, but the country's agricultural potential is not fully explored. In fact, the country is even importing vital agricultural commodities, even rice the country's staple food. On the other hand, alongside the increasing demand for food is the growing demand for power to keep in pace with the country's economic development and population growth.

Power generation today, however, is subject to environmental laws and in accordance with the global clean energy initiatives. The Philippine government is supporting the generation of energy using agricultural crops and wastes as feedstock. Consequently, the advancement in the use of agricultural crops and agricultural waste for biofuels has further widened the opportunities for agricultural development in the Philippines.

Enabling laws for agricultural modernization and clean energy promotion have been enacted in the Philippines. However, the Agricultural and Fisheries Modernization Act of 1997 has proven to be inadequate because agricultural zoning was not completed first and the needed infrastructure for agricultural development in line with the zoning was not even planned. Similarly, two enabling laws in line with the development of clean energy have been enacted, the Biofuels Act of 2007 and the Renewable Energy Act of 2008 still need adequate support to generate large economic and environmental impacts.

The glaring indicators why the laws are not effective, therefore, are not the absence of concrete legal and operational framework they are implemented. What is more glaring is the lack of a physical framework that can provide a tangible structure and order for agricultural modernization on the one hand and clean energy development on the other hand. On this basis, these mega infrastructures and regional facilities are being proposed to provide the needed physical and management structure and order for agricultural modernization and clean energy development.

In the Philippines, there is an existing physical infrastructure that can house the structure for agricultural development and bioenergy development. These facilities include the Subic Bay Freeport Zone (SBF) in Zambales, the Cagayan Economic Zone Authority in Port Irene, Cagayan, and the Zamboanga Economic Zone Authority in Zamboanga City. The diversity in products to supply both the domestic and international market is also attractive for investment.

The International Food and Bioenergy Park Providing the Structure and Order

The Park will be patterned after the International Food Park model prepared by Wageningen University and Research Center in The Netherlands. It is spread over 500 to 1,000 hectares which will be linked to various production and trading centers in the country.



The international food and bioenergy park being proposed is easily accessible by road, rail, sea, and air.

The site is also within easy distance, which thus connects the park to international markets and thereby making this a logistically efficient site. The park has facilities for:

- **Production** – Green Houses, Glass Houses, Tunnels and Nurseries for plant production, integrated dairy farms, and livestock farms etc.
- **Aggregation** – Market terminal, loading and unloading Yards, Sorting, Grading and Auction Halls
- **Segregation** – Sorting-Grading-Repacking Facilities for Wet and Dry cargo
- **Post Harvest** – Pre-cooling, Ripening, Irradiation and Vapor Heat Treatment, IQF / Freeze dried / RTC / RTE
- **Storage (Wet)** – Multi-chamber Cold Rooms, Commodity Cold Storage and Sub-zero Chambers **Storage (Dry)** – Modern Warehouses, Silos, Oil Tanks and Fumigation Services
- **Biomass storage and Bio-fuel Refinery** – this will serve as the “sanitary landfill” for all farm wastes that are properly segregated according to classification. This includes warehousing for feedstock, contract production of feedstock and waste collection, and centralized bio-refinery and barge transport of fuel.
- **Distribution** – Inward and Outward Logistics and Distribution/Consolidation Centers and container handling facilities etc.
- **Value Addition** – Food Processing Zone and Built-to-suit Units for Large, Medium and Small Processing Units for meat & poultry, dairy, juices, cereals, snacks, pickles, confectionary, Nutraceuticals & Food Additives (ex. Pectin) and feed manufacturing and units as desired by the tenants.

- **Quality** – World class Quality Control Lab, R&D Center, and Pilot Plant-incubation Facilities
- **Amenities** – Admin Center, IT Center, Banking facilities Guest Rooms, Dormitory and Canteens
- **Training** – Agri-polytechnic, Horticulture Training Center, Agri-clinics, Farmer Training Center, and Retail Training are being proposed.
- **Social Infrastructure** – Education, Health Care, Rural BPO, Rural Mart, Motel/Hotel, Rural Tourism, Residential Zone, Leisure, and Entertainment Zone
- **Common infrastructure utilities** - Power Generation, Transmission & Distribution, Water Sourcing, Generation, Supply & Recycling System, Telecom & Info-com Infrastructure, Sewage / Effluent Treatment System, Solid Waste Management System.

Community Development Focus of The Project

The international food and bioenergy park serves as an edifice that portrays a solid structure towards building an internationally competitive agriculture economy in the Philippines. The community focus of the project is functionally integrated with the recent development strategies in the Philippines. On this basis, farming and fishing communities in the regions served by the food and bioenergy park infrastructure are the major production units of the food park. The park also addresses concerns such as job training, business skills development, and community revitalization.

The food and bioenergy park may be functionally linked with such resources that may include supermarkets, farmers' markets, gardens, transportation, and community-based food processing ventures. The food park also focuses on self-reliance and empowerment and can establish better links between farmers and consumers, helping to strengthen consumer knowledge and concern about their food source. The food park also focuses on the food system, by focusing on collaboration among many partners involved in farming, processing, distributing, marketing, and consuming food products.

Participatory Project Ownership and Accountability

The food park embarks on experimenting with project ownership and accountability models. Its general ownership will be formed based on a mix of government, private sector, and community participation. The mutually harmonious relationships established among these important sectors and stakeholders provide the needed strength for the international food park. More importantly, the food park attracts the best technologies and business models in the world.

PROJECT GOAL AND OBJECTIVES

The goal of the project is to build the fundamental structure and order for the agro-industrial development of the Philippines using an integrated infrastructure framework for development clustering around the integrated food and bioenergy park facilities:

Specifically, the project has the following objectives:

- a) To establish five international food and bioenergy parks, 12 regional food parks, and 1 specialized park in the Philippines within a period of five years,
- b) To ensure the availability of land for the projects,
- c) To build partnership with local partners or conglomerates, and
- d) To ensure the availability of funding for the establishment and start-up operations of the facilities.

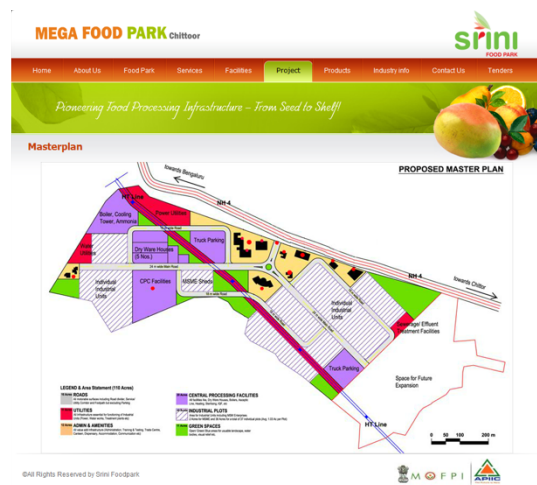
PROJECT BENEFIT

The foreseen impacts of the project include modernizing agriculture in the target area, employment generation, reduced dependency on imported food, internationally competitive agriculture sector, support to the development of clean energy in the Philippines, and more importantly its impact as a solid business and physical infrastructure for economic development.

PROJECT MODELS

The project is still in the conceptualization stage in the Philippines that is being proposed in Palawan, Tanauan, Batangas, Sto. Domingo, Nueva Ecija and Cagayan Free Port Zone. However, state of the art international food park models in China, India, and The Netherlands are still either in the planning or construction stages. In India, there are 20 food parks out of the 30 proposed all over the country are being proposed.

The PFBPark be established as a public sector private sector conglomerate. It will enter into agreement with Wageningen University and Research Center (WUR) in the design and management of the project.



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SOURCE OF FUNDING

Every project company to be established gets funding and management support through the PFBPark. The corporation arranges for funding through the investment fund to be established.

PROJECT COST AND PROJECT AREAS

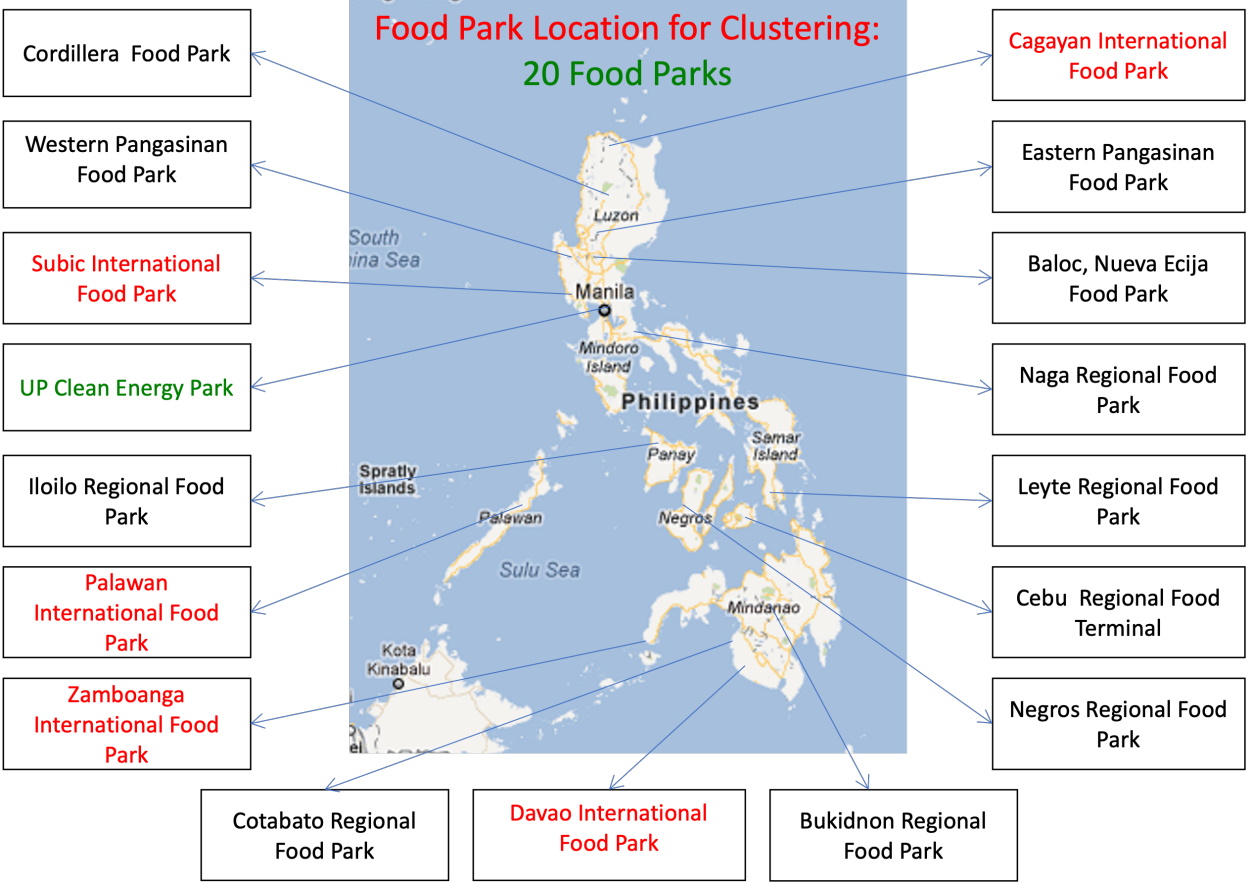
The total project cost of investment over a period of 6 years is equivalent to 11.3 billion USD. The food park facilities are classified as international food and bioenergy park, regional food terminals, and specialized food and clean energy park. Five (5) international food parks, 12 regional food parks, and one (1) specialized park that are being proposed initially.

Project	Project Description	Project Cost (Million USD)
International Food Park		
1. Subic International Food and Bioenergy Park	To be placed inside the Subic Free Port Zone in Zambales, the focus of the facilities will be the food products in the Northern and Central Luzon Regions of the Philippines for export as well as for domestic consumption. Focus is on primary products such as mango, fruits from Pangasinan, the Cordilleras, Central Luzon, and the Cagayan Valley Region, and grains products from Central Luzon and Cagayan Valley. The Food Park can also be used for the importation of other food products through its warehousing and cold storage facilities. The facilities also include waste to energy facilities for biofuels production and electricity generation. Includes five satellite centers.	1,500
2. Cagayan International Food Park	Using the Port Irene in Sta Ana, Cagayan as the facility, the food park focuses on products for export to China, Taiwan, and Korea. The main products will be grains, livestock, and vegetable from Cagayan, Isabela, Nueva Vizcaya, Ilocos Provinces, and Kalinga and Apayao Provinces. Includes 5 satellite centers.	1,000
3. Zamboanga International Food Park	As an international food park to be placed inside the Zamboanga Free Port Zone, focus is on the export of sea food products from Western Mindanao and other neighboring islands in Malaysia. Includes five satellite centers.	1,000
4. Davao International Food Park	The facilities serve the Davao Provinces. Focus will be on fruits and vegetable, plantation crops, aquaculture and sea food, cut flower and potted plants. Focus is also given to clean energy development using biomass. The facilities also include a winery that makes use of tropical fruits for the export market. Includes five satellite centers.	1,000
5. Palawan International Food and Bioenergy Park	To be established in Puerto Princesa, it is an international food and bioenergy park that will have sea foods as the banner products. The production and processing of plantation	600

Project	Project Description	Project Cost (Million USD)
	crops such as cashew, coffee, and cacao will be also major activities. Part of the project is a biofuel. plant that will make use agricultural waste as feedstock. Includes 3 satellite centers.	
<u>Regional Food Terminals</u>		
1. Tanauan Food Terminal	This is the alternative to the Food Terminal Market in Taguig. It will serve as the trading center for products from the Southern Luzon and other provinces in the Visayas that use the nautical highway system. It also serves as the trading center for products from Northern Luzon for marketing in the Visayas and Southern Luzon Provinces. Includes five satellite centers	500
2. Cordillera Food Park	This facility explores the vegetable, cut flower, and potted plant industries in the Cordilleras, to be established in Benguet. It includes 3 satellite centers	300
3. Pulilan Food Terminal	North of Metro Manila also requires the establishment of food terminal facility in Bulacan to decongest the Divisoria Market. This facility serves as a modern trading center. It includes 3 satellite centers.	300
4. Baloc Food Park	The food park serves the Northern Central Luzon Region. Based near the Munoz Science City, it also explores the resources of various research centers in the area. This food park has a rice and grains processing center, livestock breeding, processing, and trading center, farm machinery center, and cold storage for onion, mango, and vegetables. The food park has a modern mushroom production and processing center. It includes 3 satellite centers.	300
5. Western Pangasinan Food Park	The focus will be on sea food processing both for export and domestic consumption. The food park will include cold storage, fish processing, and fruit processing facilities. It will also include a biofuels facility that is linked with biomass plantation in the Western Pangasinan and Zambalez boundary. Includes 3 satellite centers.	300
6. Eastern Pangasinan Food	Serves Eastern Pangasinan towns, part of	300

Project	Project Description	Project Cost (Million USD)
Park	Nueva Ecija and Nueva Vizcaya, the Ilocos Provinces, and Benguet and other Cordillera Provinces. Focuses on mango, vegetables, and livestock, and biomass production as feedstock for power generation. Includes 3 satellite centers	
7. Lucena Food Park	Serves the Quezon and Camarines Norte Provinces and the island provinces of Marinduque and Masbate. Principal products include coconut, livestock, and sea foods. Includes 3 satellite centers	300
8. Naga Food Park	Serves the Camarines Sur and Albay area, Catanduanes, Sorsogon, and Northern Samar. Focuses on sea food processing and grains handling to supply the requirement of the CALABARZON and Metro Manila areas	300
9. Iloilo Regional Food Park	Serves Panay Island. Focuses on fish and other sea food products to supply Metro Manila and Cebu. Includes 5 satellite centers	500
10. Cebu Food Terminal	A regional food terminal facility to be established within the Metropolitan Cebu area that serves both the trading and processing of sea foods, vegetables and cut flowers, and meat products. Includes 5 satellite centers.	500
11. Negros Food Park	Serves Negros Island as facilities and business for aquaculture and fish processing, vegetables, and potted plants and cut flowers. Includes 3 satellite centers	500
12. Leyte Food Park	Serves Leyte, and Western and Eastern Samar. Major products include sea foods and root crops. Includes 5 satellite centers	500
13. Bukidnon Food Park	Focuses on grains handling, fruits and vegetable, meat, biomass plantation development with biofuels production and electricity generation. Includes 5 satellite centers	500
14. Surigao Food Park	Serves the Surigao and Agusan Provinces. Products are mainly sea foods for the Metro Manila and Cebu markets and for export to other foreign destinations. Includes 5 satellite centers	500
<u>Specialized Parks</u>		
1. UP Clean Energy Park	The park showcases commercial models of	600

Project	Project Description	Project Cost (Million USD)
	<p>biomass gasification, wind, waste-to-energy, tire pyrolysis, solar, and other clean energy technologies that can be replicated on a national scale in the future. The project also serves as facility for research and instruction purposes that can straddle various academic disciplines in the university, which include engineering, physical and biological sciences, business management and finance, and agriculture. The park is entrusted with the national role of demonstrating that commercial scale models are viable for investment and the business and government sectors in the Philippines are prepared for large scale and sustainable investment. The park further showcases the commercial application of clean energy technologies as it also run facilities that utilize clean energy products such as cold storage, transportation facilities, and gas tank farm for storage within the clean energy park. Includes 3 satellite centers.</p>	
TOTAL		11,300



PROCEDURE FOR FUNDING AND PROJECT IMPLEMENTATION

Responsible Party	Task	Document
<ul style="list-style-type: none"> • Philippine Food and Bioenergy Park Corporation 	<ul style="list-style-type: none"> • Submit letter of interest in building the food park in the selected location, either to local government unit or private party, particularly landowners with land and will be able to consolidate the land requirement 	<ul style="list-style-type: none"> • Letter of Interest
<ul style="list-style-type: none"> • Local Government Unit • Private Group 	<ul style="list-style-type: none"> • Offers firm commitment to provide land for food park project 	<ul style="list-style-type: none"> • Letter of firm commitment
<ul style="list-style-type: none"> • Philippine Food and Bioenergy Park Corporation 	<ul style="list-style-type: none"> • Offers funding and joint venture participation commitment to collaborating parties 	<ul style="list-style-type: none"> • Letter of firm commitment
<ul style="list-style-type: none"> • Philippine Food and Bioenergy Park Corporation • Local Government Unit • Private Group 	<ul style="list-style-type: none"> • Establishment of the joint venture project company 	<ul style="list-style-type: none"> • Incorporation Papers • Shareholders' agreement
<ul style="list-style-type: none"> • Philippine Food and Bioenergy Park Corporation • Joint venture project company • Consultant 	<ul style="list-style-type: none"> • Preparation of the detailed feasibility studies 	<ul style="list-style-type: none"> • Detailed engineering and financial studies • Socio economic studies
<ul style="list-style-type: none"> • Joint venture project company • Investment Fund 	<ul style="list-style-type: none"> • Construction of the project • Disbursement of fund 	<ul style="list-style-type: none"> • Construction project reports • Financial reports
<ul style="list-style-type: none"> • Joint venture project company 	<ul style="list-style-type: none"> • Marketing campaign to look for locators. • Awarding of contracts to locators • Technical and financial assistance to locators • Marketing and promotions campaign to forge partnership with production centers and other institutions 	<ul style="list-style-type: none"> • Marketing campaign • Contracts
<ul style="list-style-type: none"> • Joint venture project company 	<ul style="list-style-type: none"> • Operations of facilities and business in the food 	<ul style="list-style-type: none"> • Project reports

Responsible Party	Task	Document
<ul style="list-style-type: none"> • Production centers • Other partners 	park	

SCHEDULE OF IMPLEMENTATION

Food Park	Year 1	Year 2	Year 3	Year 4
	Million USD			
<u>International Food Park</u>				
1. Subic International Food and Bioenergy Park	1,500			
2. Cagayan International Food Park		1,500		
3. Zamboanga International Food Park		1,500		
4. Davao International Food Park			1,500	
5. Palawan International Food and Bioenergy Park	1,500			
<u>Regional Food Terminals</u>				
1. Tanauan Food Terminal	200			
2. Pulilan Food Terminal		200		
3. Cordillera Food Park			200	
4. Baloc Food Park	200			
5. Western Pangasinan Food Park			200	
6. Eastern Pangasinan Food Park				200
7. Lucena Food Park				200
8. Naga Food Park			200	
9. Iloilo Regional Food Park		300		
10. Cebu Food Terminal		200	300	
11. Negros Food Park				300
12. Leyte Food Park			300	
13. Bukidnon Food Park		400		
14. Surigao Food Park			300	
<u>Specialized Parks</u>				
1. UP Clean Energy Park	500			
	3,900	4,200	2,800	700

ORGANIZATION AND MANAGEMENT

The Holding Company

The Philippine Food and Bioenergy Park Corporation as the holding company is the principal initiator, funding facilitator, and overall management arm of the various facilities to be established through various project companies. The holding company has the following composition:

- Global Green Technologies Corporation

- Solidaridad 2020
- Investment Fund Participants
- Foreign Funder

The Project Companies

The composition of every project company depends on the project and the participant in the establishment of every facility. A typical project company, however, has the following as stakeholders:

- The holding company.
- Local government units
- Government corporation or state college and university
- Farmers association
- Landowner
- Local participating bank

REVENUE STREAMS

The potential revenue streams are ss follows:

- Facilities leasing
- Toll processing for the use of processing facilities
- Energy generation
- Investment in Partner Companies
- Investment in satellite production centers
- Banking operations
- Marketing operations

The model food park costing about 1 billion USD will have the projected revenue streams and yearly gross income is 234,299,200.00 USD.

	Yearly Volume	Unit	Toll Income (USD)	Per Unit	Yearly Income
Food Products					
Slaughter pig	50,000.00	Metric Ton	0.25	USD/kg	12,500,000.00
Processed meat	20,000.00		0.25	USD/kg	5,000,000.00
Chicken	100,000.00	Metric Ton	0.25	USD/kg	25,000,000.00
Vegetables from greenhouse and open field agriculture	100,000.00	Metric Ton	0.1	USD/kg	10,000,000.00
Fruits		Metric Ton	0.15	USD/kg	

	Yearly Volume	Unit	Toll Income (USD)	Per Unit	Yearly Income
	100,000.00				15,000,000.00
Mushroom	6,000.00	Metric Ton	0.2	USD/kg	1,200,000.00
Fish and shells	100,000.00	Metric Ton	0.3	USD/kg	30,000,000.00
Grains	1,000,000.00	Metric Ton	0.05	USD/kg	50,000,000.00
Egg	250,000,000.00	Metric Ton	0.0001	USD/pc	25,000,000.00
Vegetable oil	200,000.00	Metric Ton	0.05	USD/kg	10,000,000.00
Non-Food					-
Machineries	3,000.00	Metric Ton	100	USD/kg	300,000.00
Fibers	5,000.00	Metric Ton	0.5	USD/kg	2,500,000.00
Organic fertilizer	50,000.00	Metric Ton	0.1	USD/kg	5,000,000.00
Feeds	100,000.00	Metric Ton	0.05	USD/kg	5,000,000.00
Seeds	5,000.00	Metric Ton	0.05	USD/kg	250,000.00
Potted Seedlings	1,000,000.00	pcs	0.05	USD/pc	50,000.00
Potted plants	1,000,000.00	pcs	0.05	USD/pc	50,000.00
Wastes for energy and fertilizer					
Manure	100,000.00	Metric Ton	0.05	USD/kg	5,000,000.00
Rice straw	100,000.00	Metric Ton	0.01	USD/kg	1,000,000.00
Services					
Electricity	78,840,000.00	Kw-hr, 7884 hours	0.13	USD/kw-hr	10,249,200.00
Rental offices	0,000.00	Square meter	5	USD/square meters/month	1,200,000.00
Trading center	200,000.00	Metric Ton	0.1	USD/kg	20,000,000.00
TOTAL GROSS INCOME					234,299,200.00

CONCLUSION

The PFBPark will become the prime mover in the establishment of vital infrastructure facilities for the agricultural development of the Philippines. These food and bioenergy parks will provide the needed physical structure and order for all the stakeholders in the agriculture and clean energy sectors to follow. From this infrastructure, there are further spinoff opportunities that can sustain employment generation for a wider mass based economic development.