

# Waste Management

PT. Great Giant Pineapple

## The Business Case

Great Giant Pineapple (GGP) was established in 1979 and is located in Lampung, South Sumatra, Indonesia. GGP has a total of approx. 31.000 hectares of land and planting pineapple and others rotation crop. It has 5 major plants for cannery, can making and drum, labeling, juice concentrate, and can process 2,000 tons of fresh pineapples each day. The annual pineapple harvest is more than 500,000 tons of pineapples annually, making it the third largest producer of canned pineapple products and pineapple juice concentrate in the world.

The company's primary products are canned pineapples, pineapple juice concentrate and canned tropical fruit salad. All of Great Giant Pineapple's products are exported to over 50 countries in Asia Pacific, North America, South America, Middle East and Europe. GGP promotes its self with the motto "The Green Company".



## The Issue

GGP is aware that the agriculture business of their scale generates massive amount of waste, but on the other hand, they have to maintain and fulfill world demand on sustainable and green agricultural products. Another challenge for GGP is that they should have a role of reducing the factors that promotes climate change and impact toward the surrounding environment as required by the government regulations, NGOs, customers and communities.

## The Response

GGP has already practiced green agriculture for more than 20 years, and their pursuit of sustainability is to balance and continuously improve the three elements of their performance which are social, economic and environment, following the Triple Bottom Line Approach that focused on people, planet and profit. GGP has a fully integrated operation, where they are involved from the development of improved seed varieties, through cultivation, harvesting, processing and packaging, to final shipment of the finished product. This integration gives GGP an edge in quality control and traceability of products, and also environmental sustainability through synergy in waste management. GGP's plan is the "magic formula" ratio 30:40:50, which are decreasing fossil fuel usage by 30% by replacing it with renewable energy, decreasing the use of inorganic fertilizer by 40%, and increase the quality and yield by 50%.

## Activities

Sustainable Agriculture can be done by changing agriculture practice used in traditional agriculture and green revolution to modern agriculture. According to the World Wildlife Fund (WWF) Indonesia, as one of the world's largest fully integrated pineapple plantations and processing facilities, PT Great Giant Pineapple (GGP), in Terbanggi Besar, Central Lampung, is the only company in the country to have applied the "Blue Economy" initiative, which generates profit by being environmentally responsible, other than reducing emission.

GGP realizes that the challenge is how to implement reduce, reuse and recycle (3R) of wastes by applying traditional agricultural practices, in order to reduce environmental damage. Their main green agriculture activities in waste management are to create a closed loop as follows:

1. In 1984 established their own cattle-fattening business and feeding them using the residue of the pineapple processing. Later on it became its own company, Great Giant Livestock (GGL), which includes the facility to produce cattle meal by processing the pineapple peel, for internal use and also being exported.
2. Developed the fertilizer plant utilizing the manure from the cattle farm and use it in the pineapple plantation.
3. Established biogas plant using Upflow Anaerobic Sludge Blanket (UASB) methane reactors, to process the liquid waste from the pineapple and tapioca factory, generating electricity for the plantation complex, reducing the use of fossil fuel for the thermal boiler and the cogen boiler, also reducing the methane emission by flaring the excess gas. In addition, GGP established Liquid Organic Biofertilizer (LOB) plant, as the source of soil microbes for the plantation.
4. Established composting facility by utilizing the solid waste from the tapioca, cow dung and also solid waste from the bromelain enzyme factory, and using the compost as fertilizer for the pineapple plantation.
5. Good designing of the waste treatment facilities is resulted in high performance of waste water treatment plant,



with high COD (Chemical Oxygen Demand) and BOD (Biological Oxygen Demand), achieving above 90% removal.

6. For the efforts of good waste management and reducing GHG emissions, GGP performance is audited by third party in order to be verified and monitored periodically, to calculate their total carbon emission reduction.
7. Performed energy audits to identify possible of energy savings and use the bio-gas for tapioca drying and power generation.
8. Proper disposal and management of hazardous and chemical waste.

### The Result

All of the joint efforts from the people of the company culminated significant results, due to the scale of the operations. GGP has been awarded ISO 14000, SA 8000 certification, and also 2004 KEHATI award. Now GGP produces more than 25,000 Nm<sup>3</sup> of methane biogas a day to supplement and replace fuel oil and partly coal used in its starch dryer and steam boilers. By using biogas as renewable energy, GGP can reduce 100% of HFO and 5-6% of coal as fossil fuel consumption for Tapioca Thermal Oil Boiler and Coal Fired Power Plant. The integration of chain of production processes and closed loop waste system resulted in significant efficiency in cost, raw materials, fossil fuel usage, and reduction of waste disposal.

### Further Information

General Information for The Company	
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Company industry	Integrated Pineapple Plantation and Pineapple Cannery
Number of Employees	15,500 employees
Source of Information	
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