Great Giant Pineapple: Soil Health Management

The business case

GGP has emerged as the fastest growing producer in the pineapple Industry, supplying 14% for Canned Pineapple & 4% for Pineapple Juice Concentrate of global demand from the plantation in Lampung, with an integrated operation in 32,000 Ha of land (divided in 2 locations : 20,000 Ha and 12,000 Ha).

GGP have already implemented green practices for over 20 years.

The issue

In their business, GGP aware that they have to cope with several challenges such as the world demand or requirement on sustainability, climate change, and high dependency on environmental carrying capacity, as well as the customer requirement on green products, development of government regulations or requirements on sustainability and environmental aspect by customers, communities and NGOs, development or changes of social aspects or communities around the company, and efficiencies where in some cases, sustainability can help to achieve efficiencies.

The response

GGP's pursuit of sustainability is to balance and continuously improve the three elements of our performance, which are economic, environment, and social.

As the response to the challenges, GGP develops a Commitment to Agriculture Sustainability Farming scoping the production yield, GHG emission reduction, soil health, and environmental issues which was driven by:

1. Waste to Worth Initiative
    - Biogas - The large amount of waste water from pineapple and tapioca factory requires a sizeable land to treat the waste and meet government environmental standard. Converting into biogas as renewable energy can help company reduce 100% of HFO in tapioca drying and **7**% of Coal use in power plant. This initiative is also reducing the GHG by approx. 40,000 ton CO2 eq.

- Compost – Cattle dung if not treated can become an environmental issues and polluting public rivers. Through composting initiative cattle dung can become a nutritious fertilizer that help plant grows better and reducing chemicals fertilizers use in plantation.

2. Soil Fertility – As the result of long term application of chemical fertilizer soil fertility become degraded and cannot sustain the agriculture farming. Soil biodiversity, chemicals and physical structure are affected. Along with compost, company has built and produces Organic Fertilizer in Liquid form (called Liquid Organic Fertilizer -LOB). This fertilizer consists of *rhizo-bacteria* that help plant to uptake nutrients from soil and also produce *phyto-hormones* which is very useful to plant growth.

GGP applies modern agriculture rather than traditional and green agriculture, which is understood as the practice of farming using principles of ecology to increase biological, physic and chemistry quality of soil with integrated and closed cycle approaches. The closed cycle approaches can generate nearly Zero Waste where the solid waste is used to feed the cattle and the manure from cattle is used as organic fertilizer

The objectives from applying Good Practices Agriculture are:

1. Achieving High Yield, Reducing Waste
2. Comply with Environmental Regulations and Customer Requirements
3. Participate to Global Warming Prevention by Reducing Green House Gases Emission

GGP also set their goal to improve and sustain plantation production yield, reducing chemical fertilizer use, and for better environmental management with objective in 2018 to reduce 30% non-renewable energy, reduce 40% of chemical fertilizers, and in 2020 to increase plantation yield 50%.

Activities

GGP works on waste to energy program, renewable energy and clean development management; underground water consumption is reduced and replaced with surface water and also social responsibility program.

To achieve their energy reduction objectives ,in 2011 a biogas plant was constructed followed by composting plant that was constructed in 2013 and the last but not least is the Liquid Organic Bio Fertilizer that was constructed in 2012 and was expanded in 2013.

As part of Good Agriculture practices for Sustainable Agriculture, the farming uses principles of ecology. It uses bio fertilizer and organic fertilizer application as well as the biological or organic pest controller, nutrient conservation, soil conditioner, plant rotation, and nutrient storage.

Papaya farmers and tapioca farmers are involved in alliance to produce more and improve their income.

The results

As result of the initiative are:

1. Reduction of 100% HFO in tapioca drying and 7% coal in power plant.
2. Maintain or improve soil health and fertility.
    - Improve soil structure will make better roots development.
    - Increasing cation exchange capacity will make better nutrient uptake.
    - Increasing water holding capacity, will make better water availability in the soil during dry season
    - Increasing biodiversity in the soil
    - Increasing nutrients for the plant in the soil
    - Reduce chemical fertilizers

It is expected that farmers in Lampung and GGP can get the benefit from this activities through better production output. Improved environmental standard compare to business as usual is believe will make the business more sustain.

Further information

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