

ABSTRACT

The decreasing quality of Indonesian farming field is caused by many factors; one of which is due to the overuse of chemical fertilizer. This abundant dosage of chemical fertilizer can be suppressed with the use of biofertilizer which is capable to restore the fertility of the soil. However, biofertilizer cannot fully substitute the existence of chemical fertilizer because the main elements needed by plants can only be provided by chemical fertilizer. To cope with this problem, the government has tried to utilize balanced fertilizing programme between biofertilizer and chemical fertilizer. In accordance with the company's long-term plan of product diversification and to support the government programme, PT Pupuk X with strategic partners are planning to develop a new unit, which is a biofertilizer factory.

Biofertilizer is fertilizer which contains inoculant Nitrogen-binding bacteria, phosphate dissolving bacteria and Kalium releasing bacteria which are useful elements for fertilizing food plants, vegetables, plantation plants and decoration plants. The use of biofertilizer is proven to make chemical fertilizer usage more efficient and effective, and restore the soil structure that in turn would enhance the quality and quantity of the crop.

To avoid mistakes in investment decision, a feasibility study is needed as an input before the decision of accepting or refusing the investment is taken to avoid improper investment. For that purpose, this research focus on analysing the feasibility of the investment of biofertilizer factory of PT Pupuk X.

The first step of this feasibility study is to analyse current market condition of biofertilizer using consumption data of chemical fertilizer to forecast market need of biofertilizer. Afterwards, an analysis towards the technical aspect of the biofertilizer factory, such as product capacity, production equipment requirements, raw material availability, factory location, production process and the financial elements needed, is done. Financial calculation to judge the financial feasibility of the biofertilizer unit is the next thing to do. The criteria of financial feasibility are Net Present Value (NPV), Internal Rate Return (IRR) and Payback Period (PBP). The results of the three criteria would become the main point of business decision taken of the investment. Other than the result of the feasibility criteria, a sensitivity analysis to configure the sensitive variables towards the investment judgement.

After the analysis of market aspect, it is known that market needs for biofertilizer is very large, so PT Pupuk X with strategic partners are optimistic that the production result will be absorbed 100%. In the technical aspect, there is no obstacle in executing the production of biofertilizer unit. From financial calculation, the results are NPV value of 1.321.692.216 IDR ($NPV > 0$), IRR 44% (larger than the MARR value of 20%) and PBP of 3,19 years. The sensitivity analysis showed that the investment is sensitive towards change of raw material cost and revenue, while the variables of labor cost and investment cost are insensitive variables towards investment judgement criteria.

Key words : Biofertilizer, Needs, Factory, Finance, Feasibility