DETERMINATION OF SUPPLY CHAIN LOCATION SEAWEED INDUSTRY WITH DYNAMIC PROGRAMMING

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ABSTRACT

Activities to proceed natural results into a product, start by determining the potential location, to manage raw materials, processes, until the product is ready to consume. Location determination is strongly influenced by characteristics owned by an area, especially with regard to raw materials derived from agriculture. Location determination is usually influenced by similarities characteristics that are owned by several places in the same area, so that it is important to determine the role of a location, to cultivate natural results. The research will be observed on location determination, for seaweed commodities which consist of the region, seaweed farming, industrial base, industrial processing, and distribution. The Analytic Hierarchy Process (AHP) is used to determine the weight priority location to proceed seaweed, *which focus on aspect natural resources, infrastructure, labour, technology, policy, education, and economy*. The weight of each subsequent location is used, to determine supply chain with the largest sum of weights. Determination of the largest sum of weights, formulate by utilizing the dynamic programming, As well as assigning of an effective supply chain for seaweed industry on a region. The results with a dynamic programming model, show that supply chain performed by changing weight result from AHP to proceed effectively by minimum function of stagecoach dynamic programming model, and final result normalized to find maksimum sum of weight that show the best location with potential processing industry for seaweed in each area.

Keywords: Location, Supply Chain, Industry, Seaweed, Dynamic Programming

1. INTRODUCTION

Seaweed is a plant that belongs to the family, algae multicellular in *thallophyta* division. Basically seaweed is a commodity derived from coastal waters that can be consumed, which characterized with living on the ocean base, reached by sunlight, no roots, stems, and leaves (Hurtado, et al., 2017). Seaweed can be classified into four classes: *chlamydomonadales* (green algae), *rhodophyceae* (red algae), *cyanophyceae* (blue algae), and *phaeophyceae* (brown algae) (Tiwari & Troy, 2015). The type of seaweed that is generally used as industrial raw material