UNIVERSITI TEKNOLOGI MARA

IMPACT OF MECHANIZATION ON COSTS, WORKERS' PRODUCTIVITY AND LABOR-LAND RATIO FOR IN-FIELD EVACUATION OF OIL PALM FRESH FRUIT BUNCH: A CASE STUDY IN SUNGAI SEMAK ESTATE

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Thesis submitted in fulfillment
of the requirements for the degree of
Master of Science

Faculty of Plantation and Agrotechnology

May 2018

ABSTRACT

The issue of labor and foreign workers in the oil palm industry should be treated as a top most priority item in moving the industry forward. Despite the employment of 610635 workers of which 90 percent are foreign workers, this industry is a major contributor to the projected export earnings at RM65 billion and RM75 billion in 2010 and 2015, respectively. There are many estates, which have introduced mechanization, however they failed to maximize improving productivity due to not suitable system or machine use. The main objectives of this study are to analyze harvesting operating costs, machine path maintenance cost for mechanized and manual systems for infield evacuation of oil palm FFB and mechanized system implementation cost, to compare workers' productivity and land labor ratio on mechanized and manual system using wheel barrow for infield of oil palm FFB evacuation and propose new mechanization system for oil palm FFB infield evacuation. The data have been gathered based on one hectare and oil palm tonnage basis in accordance with the monthly report of operations during the year. To ensure strengthen support to the data that have been obtained a series of interviews with supervisors, foremen and workers concerned were undertaken to gather as additional input. The findings indicate that harvesting operation cost including internal transport and harvesting path maintenance cost through manual method is RM 60.46 per ton, while the mechanization is RM 55.98 per ton. The return on investment for implementing of harvesting mechanization is 0.12 which take about 8 years to get the return. In the re-strategized plan, mechanized system implementation cost can be reduced by RM 199,400.00 representing a decrease of 26.53% and also save internal transport cost about RM 6.24 per ton by construct a new collection road distance of about 1000 meters in future replanting time and the use of compact tractor TT55 and 4 ton hooklift cum with double axle tires are not needed anymore. The outcome of the study will able to lead to an alternative plan for optimization of mechanization strategy specifically for Sungai Semak Estate and any estates with similar characteristics. Although the study was conducted at Sungai Semak Estate, the thesis is applicable of extending this result to the other places as well.

ACKNOWLEDGEMENTS

Alhamdulillah, praise to Allah, for me to be able in finishing this dissertation titled "Impact of mechanization on costs, workers' productivity and labor-land ratio for in-field evacuation of oil palm fresh fruit bunch : A case study in Sungai Semak Estate" as the partial fulfillment of the requirement for the Master in Plantation Industry Management's course.

First and foremost, I would like to say thank to my parents and wife for their continuous motivation and prayers, for giving me the courage to further my study in the Master level. Thanks also to my project supervisor, Dr. Darius El Pebrian who are always giving his best, in supporting and guiding me throughout the entire process to complete the thesis.

I also want to extent my appreciation to all the lectures and friends at the Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA for their motivation and assistance during the completion of this thesis.

Lastly, I want to thank Sungai Semak Estate management for giving the permission to do the study on their plantation area, and hope this research will have some impact to the plantation management practices in the future.

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