# Analysis Of The Needs And Workload Of Harvest Foreman at PT Salim Ivomas Pratama, Sungai Dua Estate, Riau, Indonesia

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**ABSTRACT:-** PT Salim Ivomas Pratama Sungai Dua Estate manages 5,740 Ha plantations divided into six divisions. Since the age of the plant that has been over 25 years and the production of fresh fruit bunches (FFB) that goes down, it will be replanting gradually. Divisions 2 and four have been replanting, and Division 1 is planned to replanting in 2019. At this stage, careful and detailed planning is needed to avoid losses including planning of human resource allocation, especially harvesting. With reduced areas of yielding crops, it is necessary to adjust the number of harvested foremen. Based on these conditions, this study aims to calculate the number of harvested foremen. Method of data collecting by observation, interview, questionnaire sampling, and documentation. The population of this study was all harvested foremen in 6 Division Sungai Dua Estate, i,e 18 people. Based on the results of the study, the numbers of harvested foremen were 14 people while the current foremen were 18 people. There are over four harvested foremen. Harvest foremen burden is highest in monitoring the harvesting work and assessing the suitability of harvesting work with set standard.

Keywords: Workload, Foreman, Harvest, Plantation, Oil Palm

# I. INTRODUCTION

Plantations have the strategic role in the development of the current national economy as set out in Law No. 18 of 2004 to increase public income, increase public revenues and foreign exchange, provide employment, increase productivity, value added, and competitiveness, meet consumption needs and the raw material of the domestic industry and optimally managing natural resources on a sustainable basis (Alfiah and Susanto, 2015).

Oil palm plantation (Elais gueneensis Jacq) is one of the many plantation commodities that many farmers and plantation actors are currently working on in Indonesia. Yohansyah and Lubis (2014) stated that oil palm plantation activities had external effects that are positive or beneficial to the surrounding area. Benefits of plantation activities to the socioeconomic aspects include improving the welfare of the surrounding communities, expanding employment and employment opportunities, contributing to regional development.

PT. Salim Ivomas Pratama Tbk is one of the largest agribusiness group operating in Indonesia. Management of business activities through two business divisions, namely plantation divisions, oil divisions, and vegetable fats. Human resources are one of the most critical production factors in the oil palm plantation sub-sector besides production, land, capital and management factors, as it is crucial in a work process (Nainggolan et al., 2012). Human resource planning is the process of analysis and identification that the company has done to its human resources needs so that the company can determine the steps that must be taken to achieve its goals. If a company has excess resources will cost overload, and otherwise, the human resources shortage will have difficulty completing the work HR planning aims to ensure that the resources needed, both quantity and quality are available when needed (Badriyah, 2015). In order to achieve effective supervision, usually, one foreman harvesters supervise 10-25 harvesters. For calculate the required number of harvesters, harvest foremen have to observe mature fruit densities in blocks that will be harvested the previous day. Based on the number of mature bunches to be harvested and harvesting capacity, then in the morning, the harvested foremen can determine the number of harvesters every day. Given the importance of the foreman mandrake task in the production process, the researcher is interested in analyzing the need for the number of foreman harvest in PT. Salim Ivomas Pratama Sungai Dua Estate through analysis of workload.

# Human Resource Planning (HR)

## II. LITERATURE REVIEW

Human resource planning is the core of human resource management because it will serve as a standard document for recruiting and organizing the composition of resources within the organization. Without a clear plan of human resource needs an organization will have difficulty and especially in determining the

direction in the event of an additional employee need. Planning is needed to anticipate and utilize resources effectively since considering that resources are always limited by the goals that they want to achieve are always unlimited (Hayati, 2014). HR planning aims to ensure that the resources needed are available when needed. When a company has excessive resources can cause cost burdens to be too heavy and less quickly in response to environmental changes. For a company that is short of employees will have difficulty completing the entire job on time. The advantages and disadvantages of employees in the company indicate that human resource planning has not been implemented well (Badriyah, 2015). Poniman and Hidayat (2015) stated HR planning is the process to determine the human resources both quantitatively and qualitatively, which are sufficient and efficient and qualitative availability that is to meet the skills and competencies required both for current and futur needs.

HR planning must be systematically and strategically related to human resource need forecasting in the future in an organization by using the right source of information, in order to provide the required amount of workforce and quality as needed. Human Resource Planning is defined as the process of determining the workforce needs for a certain period, either in quality or quantity in a particular way. This planning is intended to prevent the organization from the scarcity of labor at the time of need or excess of labor at the time of need (Noer, 2017). From some of these meanings, SDD planning is a series of activities that are systematically done to predict the needs of the workers in the required quantities and competencies as needed. To achieve the purpose of human resources planning is the availability of skilled, capable, loyal and exact workforce by the dynamics of company development or corporate business strategy demands

#### Analysis of workload

Job analysis provides useful information for qualitative labor requirements. Job analysis shows that the types of job titles and employees required to complete those tasks, but the workforce formulation function is unclear as the number of employees required is not yet calculated. Analysis of workloads is a process for establishing the number of person-hours required to complete the workload within a given time. Analyze the workload aims to determine how many workers are required to complete a job and what is the right load assigned to one employee. Analysis of the workload can be done by dividing the work content that must be solved with the average work result of one person until it will get the number of people required to complete the job (Adawiyah and Sukmawati, 2013).

A person's burden has been determined in the form of a company's standard work by type of work. If most employees work by company standards, then it does not matter. Conversely, if employees work below the standard, then the workload is excessive. Meanwhile, if employees work above the standard, it can mean lower standardized estimates rather than the employee's capacity (Anggraeni and Prabowo, 2015). Analysis of workloads is carried out to measure and calculate the workload of each job/unit in order to efficiency and effectiveness of task execution and to increase professional, transparent, proportional and rational organizational capacity. The workload component is a type of task and task description that is implemented by a particular HR type by the assigned tasks and functions.

The time norm is the average time required by an educated, skilled, trained and dedicated HR staff to perform an activity normally according to the applicable service standards at the healthcare facility. The need for time to complete activities varies greatly and is influenced by service standards, standard operational procedures (SOPs), facilities and infrastructures available and HR competency itself. The average time is set based on observations and experience during work and agreement. In order to obtain accurate, average time data that can be used as a reference, it is best to determine based on the time required to complete each core activity by human resources that have good competence and work ethic. Standard Workload (SBK) is the volume/quantity of workload for one year for each type of HR. The Standard Operating Expenses for a primary activity is based on the time required to complete each activity (time average or time norm) and available Working Hours.

### **Palm Oil Harvesting Management**

Harvest is the starting point of production and is closely linked to aquaculture activities, particularly crop preservation. Production is the result of harvesting after the process of post-harvest or processing. The success of harvesting and production depends on farming activities coupled with the availability of infrastructure and facilities for transportation, processing, organization, health, and other facilities. Palm oil harvesting is a fresh fruit bunch, its crude palm oil production and dwarf, which is an industrial ingredient is very important because it is mostly usable (Pardamean, 2011) Harvest criteria are the requirements of bunch conditions set for harvesting. Palm oils mature after five to five and a half months after pollination. Criteria for harvesting are determined when the maximum oil content of free fatty acids is as low as possible. The optimal harvest maturity criteria are 2 (two) drops per kilogram of bunches. The good fruit maturity level is at 2 and

three fractions (with 1 and 2 per kilogram weight of bunches) with a maximum of 12.5%. The good composition of the harvest was 80, 5% fraction, 5% fraction and 15% fraction 1. Harvest target is to suppress the loss and degradation of crop yields; also, harvest objectives are also to maintain sustainability and maintain future productivity. On the contrary, a good harvest is expected to create a smooth and safe harvest in the acquisition of fresh fruit bunches (FFB) at a reasonable cost.

Previous works such as Bindrianes et al. (2017) researches the productivity of palm oil harvesting and the factors affecting them in Batanghari Business Unit at PTPN VI Jambi. The purpose of this research is to find out the description of palm oil farming activities in Batanghari Business Unit at PTPN VI Jambi, the description of productivity of oil palm manpower, factor description (age, education length, working period, mileage, family dependent status, and labor status) affect the productivity of palm oil harvesting, and the influence of these factors on the productivity of oil palm harvest workers. The number of the labor force in this research was 31 respondents, with the data collection method used by survey method. For examine the influence of factors affecting the productivity of oil palm harvesting workforce is not influenced by age, education age, work duration, mileage, family dependency and labor status is 15% and the rest 85% is influenced by other factors which are not taken into account in the research this is. The status of labor partially influences factors affecting the productivity of oil palm harvest workers while the factors that are not significantly affected are the age, the length of education, the length of work, the mileage and the amount of family involvement.Ramagiri (2015) researches the implementation of employee supervision on plantation employees of PT Perkebunan Nusantara V, Unit Terantam.

As for the population in this study, all plantation workers involved in the process of 260 fresh fruit bunches (FFB) harvested consisted of section assistants, foreman I, harvested foreman, and harvesters. Based on the employee 's responsibility in the three categories of supervision, namely the determination of work standards, job assessment, and correcting the work, it can be concluded that the implementation of supervision of fresh fruit bunches (PT) in PT Perkebunan Nusantara V Terantam is appropriate. Although the majority responds accordingly, however, there are still employees who respond unsuitable. This case suggests that there is still a mistake in the supervision that is perceived by some employees, for example in terms of valuation. Some employees feel the assessment done by the foreman is inaccurate in terms of the form of assessment, the timeframe of the assessment and even some times the supervisor does not do any assessment. If this happens, the supervisor can not correct the job so that the same error can occur repeatedly. This, of course, impacts on the less optimal performance of employees that leads to the inadequacy of FFB harvest.

#### III. RESEARCH METHODS

The research was conducted at PT. Salim Ivomas Pratama, Sungai Dua Estate, Rokan Hilir Regency, Riau Province. The research was conducted from September to December 2018. This type of research is descriptive research which is a method of research aimed at describing systematic, factual and accurate information about the facts and properties of a particular object or population (Sinulingga, 2016). This research compiled facts obtained from interviews, observations and questionnaires but did not conduct hypothesis testing. The purpose of this study is to investigate in detail the human activity and work to find facts with the right interpretation to provide recommendations for future use, such as standard wages, performance standards, and employee workload. This research has the purpose of knowing the amount of need for harvesting at PT Salim Ivomas Pratama, Sungai Dua Estate.

This research uses a mixed method that is a method that combines qualitative and quantitative approaches in terms of methodology as in the data collection stage (Sugiyono, 2011). Quantitative approaches and qualitative approaches can be used simultaneously as they can complement each other so that research results are done more deeply. The population is a generalized region consisting of objects/subjects that have certain qualities and characteristics set by the researchers to learn and then draw their conclusions (Sugiono, 2011). Population in this research is all harvest foreman who works in PT. Salim Ivomas Pratama Tbk Sungai Dua Estate as many as 18 people divided into six divisions.

According to Sugiyono (2012), the sample is part of the number and characteristics that the population possesses so that samples taken from the population should be representative (representing). The sample size is the number of samples to be taken from a population. According to Arikunto (2012) if the population is less than 100, the number of samples is taken as a whole, but if the population is greater than 100, it can be taken 10-15% or 20-25% of the population. Considering the population in this study as much as 18 people, so the whole population is subject to research. Thus, this research is a population or census research where all population elements in the research area will be investigated. This research uses the technique of data observation and questionnaire workload analysis and works sampling. Observation techniques are used to determine the time norms needed for harvesting for implementing principal and supporting tasks. In this technique, researchers with

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the help of Field Assistant (FA) and Foreman I recorded the start time when the harvest foreman did his job and his expiration. The sampling questionnaire aims to observe harvest foreman activities grouped into productive, non-productive, and private activity categories. Productive activities are all activities related to the completion of employment as contained in the description of the core tasks in each work unit. Unproductive activities include the activities of employees who are not useful for work such as late, lazy, smoking, to the toilet and so on. Personal activities are the activities of employees to eliminate fatigue. The observation results are then recorded in the work sampling form. Besides, data collection to identify the tasks of the principal work is done by a combination of interviewing and observation methods.

### Results

### IV. RESULTS & DISCUSSION

# **Respondent Characteristics**

The respondents' characteristics are shown in Table 1 below:

Table 1. Unaracteristics of Respondents					
Age	Amount (person)	%			
31-40 years	8	44,4			
41-50 years	5	27,8			
51-60 years	5	27,8			
Total	18	100.0			
Working time					
1-10 years	4	22,2			
11-20 years	5	27,8			
21-30 years	7	38,9			
Above 30 years	2	11,1			
Total	18	100.0			
Education Level					
Elementary school	1	5,6			
Junior High School	5	27,7			
Senior High School	11	61,1			
Undergraduate	1	5,6			
Total	18	100.0			

### Analysis of workload

Workload analysis is descriptive of the workload required in a company unit. This method will provide information on the allocation of employee resources to complete the workload. With the implementation of the workload analysis it is expected that there will be an increase in employee work efficiency in general to meet the consumer's wishes, and ultimately the company's goals will be achieved. This method is a process to calculate the workload of a particular function within the company. From this calculation it can then be determined how much the ideal number of employee needs is needed (Wardah and Adrian, 2017). The calculation result is then used to get the time norm. The norms of each principal activity obtained from observation of all harvest foreman then calculate the average time used to complete each activity. The results are as follows:

### Table 2 Component of the main task, the norm of the time, and the standard of workload

No.	Activities	Unit	Norm Time	Working hours are available	Standard workload
1	Following a briefing at the divisional office	activity / minute	26.7	136. 920	5134.5
2	Guide harvesters	activity / minute	27.2	136. 920	5029.7
3	Divide the task to harvesters	activity / minute	31.7	136.920	4323.8
4	Fruit maturity census	activity / minute	84.4	136.920	1621.4
5	Supervise harvesting work by the provisions	activity / minute	125.6	136. 920	1090.5
6	Assess the suitability of the harvest work with the set standards	activity / minute	131.7	136. 920	1039.9
7	Collect data from work execution results	activity / minute	32.2	136. 920	4249.2

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8	Create work reports	activity / minute	88.9	136. 920	1540.4

From Table 2 it is known that the average time required for harvesting foreman in executing the primary task of the longest in assessing the suitability of the harvested work with the standard set is 131.7 minutes, while the foreman activities with the shortest time are following the briefing at the division office, ie, 26.7 minutes. The calculation result of the harvested foremen requirement is presented in Table 3 below:

	Table 3 Requirement for Harvest Foreman						
No.	Activities	Unit	Workload	Principal	Labor		
			Standards	Assignment	Requirement		
1	Following a briefing at the divisional office	activity / minute	5134.5	3731	0.73		
2	Guide harvesters	activity / minute	5029.7	3731	0.74		
3	Divide the task to harvesters	activity / minute	4323.8	3731	0.86		
4	Fruit maturity census	activity / minute	1621.4	3731	2.30		
5	Supervise harvesting work by the provisions	activity / minute	1090.5	3731	3.42		
6	Assess the suitability of the harvest work with the set standards	activity / minute	1039.9	3731	3.59		
7	Collect data from work execution results	activity / minute	4249.2	3731	0.88		
8	Create work reports	activity / minute	1540.4	3731	2.42		
Tota	Total requirement 14,94						

Currently, Sungai Dua Estate has 18 harvesting forests, and there are four labors exceed. Based on the results of the calculations of the foreman harvest requirement above, it can be summarized in Table 4 as follows:

No.	Division	Current Foreman's amount	Number of Foreman Should Be	Gap	Description
1.	Division I	3	0	+3	exceed
2.	Division II	3	0	+3	exceed
3.	Division III	3	4	-1	less
4.	Division IV	3	2	+1	exceed
5.	Division V	3	4	-1	less
6.	Division VI	3	4	-1	less
Tota	1	18	14	+4	exceed

### Table 4 Requirements for Harvest Foreman PT Salim Ivomas Pratama, Sungai Dua Estate

Based on Table 4 it is concluded as follows: In Division I and Division II, the number of harvesting foremenat this time is six people because the area does not have amangindan plant it does not require harvest foreman. Division III, the number of harvest foreman is currently 3 people while the number of foreman harvest should be 4 people means lack of 1 person. Division IV, the number of harvesting foremenis currently three people while the number of foreman harvest should be two people means the excess of 1 person. Division V, the number of foreman harvest is currently three people while the amount of foreman harvest should be four people means lack of 1 person. Division VI, the number of foreman harvest is currently three people while the amount of foreman harvest should be four people means lack of 1 person. Division VI, the number of foreman harvest is currently three people while the amount of foreman harvest should be four people means lack of 1 person.

Based on the characteristics of the respondents PT. Salim Ivomas Pratama Sungai Dua Estate employs harvesting foreman ages 31-40 years old, having 11-20 years of working with minimum secondary education. Oil palm harvesting activities are a type of heavy work and require a good physical condition. Performance and labor productivity will generally decline as age increases. Therefore, it is better than harvesting foreman is still in productive age. Salim Ivomas Pratama Sungai Dua Estate has five harvesting ages with age above 51 years, thus need to be prepared for HR to fill the position. When five foreman harvesters enter the retirement age limit, the company has the potential human resources to replace them.

Harvesting for a long time will affect the skill level and experience of the workers. Increasing length of work will be followed by increased performance so work productivity will increase. Therefore, it is better for harvest workers to have work experience over ten years so have the competency to perform tasks as harvesting foreman. Salim Ivomas Pratama Sungai Dua Estate has 12 harvesting foremen, with a working life of 11-30 years, this condition can be maintained although on the other hand the company also needs to complete the new HRD so it can replace senior harvesters at the time of need.

Potential foreman harvest to carry out work is closely related to education because it can affect the mindset, attitude, and behavior. According to Tanto, et al. (2012) high knowledge, skills, and self-confidence can improve the employee's work achievement so that it has good working productivity. Therefore, it is best to harvest foreman with a minimum education of similar high school. PT. Salim Ivomas Pratama Sungai Dua Estate has one harvest foreman with last education elementary school and five junior high schools. Companies can appeal the harvest foreman to take an equivalency exam so that they have the last education of high school equivalents.

# V. CONCLUSIONS & SUGGESTIONS

### Conclusion

Based on the results of the research and discussion, some of the conclusions that can be taken are as follows

The requirement for harvesting the entire division is 14 people while the number of harvesting foreman is currently 18 people. The situation for harvesting for each division is as follows:

- Division I and Division II, the number of harvesting foreman at this time is six people because the area does not have a crop yielding it does not require harvesting foreman.
- Division III, the number of harvest foremen, is currently three people while the harvest foreman amount should be four people who mean less than one person.
- Division IV, the number of harvest foremen currently three persons while the number of foreman harvest should be two people means the excess of 1 person.
- Division V, the number of harvest foremen is currently three people while the number of foreman harvest should be four people meaning lack one person.
- Division VI, the number of harvesting foremen is currently three people while the number of harvesting foreman should be four people which means the deficiency is one person.

Based on the average work sampling results required foreman in performing his duties as follows:

- Following a briefing at the office of the division takes 26.7 minutes
- Giving guidance to the user takes 27.2 minutes
- Taking a task to the operator requires 31.7 minutes
- The Fruit Maturity Census (SKB) takes 84.4 minutes
- Supervise harvesting jobs as required requiring 125.6 minutes
- Assessing the suitability of the harvested work with set standards requires 131.7 minutes
- Collecting data from work execution requires 32.2 minutes
- Creating a job report takes 88.9 minutes

### Suggestions

Based on the results of the research, some suggestions can be presented as follows:

- Conducting human resource planning for harvesting foreman who is now found to be over four people. The harvest foreman can be replenished by maintenance and maintenance considering that it has replanting for Divisions I, II and IV that require additional human resources in the area of maintenance and maintenance of undeveloped plants.
- Considering the oil palm plantations in Divisions III, V and IV have been over 25 years old so will be planned to replant, so the management of PT Salim Ivomas Pratama Sungai Dua Estate can calculate the need for other human resources so that HR planning for all parts can be more accurate and efficient
- Evaluate Standard Operating Policies and Procedures (SOPP) so that the average time required foreman in performing its tasks is shorter and more effective.
- For further researchers, it may be advisable to do further research not only limited to foreman but also other human resources. The next researcher can also use different methods of calculation of needs so that it can be compared.

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22 | Page