

## SUMMARY

MUHAMMAD ALKAFF. Bussiness Process Re-engineering of Sustainable Teak Seeding Production at PT Harfam Jaya Makmur. Supervised by MARIMIN, YANDRA ARKEMAN, SUKARDI and HERRY POERNOMO.

Deforestation and degradation continue to occur. Forest management on a partnership basis with the community was also one of the methods of forest management to tackle deforestation. Forest and land rehabilitation is intended to restore, maintain and improve the functions of forests and land so that their carrying capacity, productivity and role in supporting life support systems are maintained. Forest rehabilitation activities that have been done including reforestation, maintenance, plant enrichment, and the application of vegetative and civil technical soil conservation techniques on critical and unproductive lands. Forest management on a partnership basis with the community were also one of the methods of forest management to tackle deforestation. PT. Harfam Jaya Makmur, as an agroforestry company were committed to supporting the provision of legal teak and supporting forest afforestation. Breeding efforts undertaken by PT. Harfam Jaya Makmur implemented by cooperating with BPPT as a partner to seek superior teak plant. Problems faced to create superior teak seedlings is the high cost of seed production, this causes PT. Harfam Jaya Makmur teak seed products has a higher price.

The objectives of this research were 1) to know and to analyze the production process of teak seedlings, 2) to measure the performance of teak seed production process as parameter of re-engineering of sustainable teak forest business process, 3) to re-engineer the teak seed production process at PT. Harfam Jaya Makmur.

The study was conducted on March 2015 - May 2017 in teak forests in Situbondo and Bondowoso regencies managed by PT Harfam Jaya Makmur. Business process revitalization will be done with value stream mapping approach. Value stream mapping analysis begins with creating value stream mapping current state, waste identification and measurement, waste analysis, and value stream mapping future state.

Based on the results of Structural Equation Model (SEM) model analysis, there was known that all the main factors affecting the production process of teak seedlings at PT. Harfam Jaya Makmur is transportation, process, man, material and machine factors. The factor directly affecting each of main factors is the motion, while the indirectly affecting is based on motion, inventory, and defect factors.

This condition shows that there are 3 factors becoming priorities in teak seed production system improvement at PT. Harfam Jaya Makmur with the priority ranks as follows: 1) transportation that directly and indirectly influence the occurrence of waste with a strong influence reaches 60.8%, 2) motion that directly or indirectly influence, strong influence 49.5% 3) defect that has an indirect effect on strong influence of 3.8%, 4) inventory that has an indirect effect on with strong influence of 2.5%.

Factors affecting the most dominant inefficiency are transportation, consists of transporting the seedling production process supporting materials, removal from the nursery to adaptation field, and the distribution process. Inhibition of supply needs for seed production process caused by production area location that is far from supplier so impacting the delivery retard of goods especially for special case

of unplanned needed materials. The second factor is motion, the excessive movement affects the endurance decreasing of seedlings after transferred, this is happen due to several things such as the occurrence of root shift, uprooted fibers that come out from polybag and the planting media pressure diminished. Furthermore, defect and inventory are the least influential factor.

Parameters affecting performance and become the basis of system improvement is material preparation, which takes a long time because the materials must be ordered from Surabaya before entering the warehouse, whereas it is impossible to dumped the material a long time in the warehouse due to short shelf life and limited facilities of raw material inventory. Seeding production process, the waste is emerged due to defect in the process of planting explant, incubation, nursery, climatization, and distribution. This defect arises because in the plant process is moved first before processed, and the existence of facilities that need to be improved. The distribution process often leads to defects because the loading process is not done carefully and is implemented one by one, so it takes longer to process the loading, in addition the long shipping distance by ship outside region costumers requires an appropriate treatment for the plant can arrive at destination in good condition.

The engineering undertaken to system improvement involves capacity increasement, retention of non-durable materials by adding refrigerators, providing independent media planting facilities, providing special trays for exploratory planting, for incubation and nursery processes, changing shifting cultivation media models, shelf use for crops grown into polybags, this facilitates the transfer process specifically for processes that does not need to remove planting media and the use of handlifts is to move plants in groups to reduce defects and accelerate the process of removal of plants.

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