

Supawadee Pholphan 2015: Development of Logistics Planning of Passion Fruit from Extended Royal Project Area (A Case Study of Farmer Group in Chiang Mai Province). Master of Science (Agricultural Systems Technology), Major Field: Agricultural Systems Technology, Department of Farm Mechanics. Thesis Advisor: Assistant Professor Kriengkri Kaewtrakulpong, Ph.D. 81 pages

This research was done in an effort to improve the supply chain efficiency of the passion fruit cultivated in the upper Ping river basin in northern part of Thailand under the promotion of the Highland Research and Development Institute (Public Organization). The supply chain of the passion fruit was studied in order to comprehend the logistics processes. Also, this research was done in an attempt to develop the tool assisted the logistics management.

To achieve these goals, a field survey, interviews, and time studies on logistics operations were conducted. Field survey and farm visiting was done in order to clarify the constraints of the passion fruit existed in its chains. Logistics structures of the value chains from farmers to their groups and the suppliers were analyzed. Time studies of the harvesting, collecting, grading and transportation processes were conducted and the models representing such processes were developed. Also, analyses through the use of simple simulation were performed. The results shown that the time used for passion fruit harvesting and grading were 1.17 min/kg and 1.30 min/kg, respectively. The cost for grading was 1.49 baht/kg when operated by seven workers. If the wage increased to be 300 baht/day, the cost for grading would be 0.3 baht/kg. In addition, the selling plans of the passion fruit from the extended royal project area was designed and developed. The plan shown that the selling type depends on comparison of the prices. When the selling price of grading the product prior to packing increased 5 baht/kg, the farmer group should sell their products by using selling price of grading. When the selling price of grading decreased 5 baht/kg, the selling type non-grading the product was proper. The appropriate quantity of the product to sell depends on the truck capacity of hauling used for transport that is weight of product 1,080 kg/round.

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Thesis Advisor's signature