

Innovation of Financial Management and Automatic Production Machine for Nutmeg Syrup

Dwi Hariyanti*

Ambon State Polytechnic
Ambon, Indonesia

*dwhariyanti_pdia@yahoo.com

Jaelani La Masidonda¹, Jeffrie Jacobis Malakuaseya²

¹ Darusalam University Ambon, ² Ambon State Polytechnic
Ambon, Indonesia

Abstract—Maluku region has many famous spices, one of them is nutmeg. Nutmeg is produced in several areas namely Morela, Lehitu and Central Maluku. The nutmeg is not only taken part of flowers and seeds in this region, but also utilized by community to make nutmeg syrup. The Village Unit Cooperative at Toma Siwa is one example of nutmeg syrup producer, even though in a traditional or still manual way. For this reason, authors intend to make an innovative prototype of an automatic nutmeg machine tool to improve the production process of community. In addition to the production weaknesses, financial management also becomes a concern. They do not understand correctly about how to manage money. The most important thing for them is they have money to fulfil the need. Based on these problems, authors make innovation of management of financial management and making nutmeg syrup production machines.

Keywords—financial management, production machinery, innovation, Toma Siwa

I. INTRODUCTION

Maluku region has a lot of natural resources. One of them is nutmeg. Nutmeg is the superior product of Maluku Province. Lawalata et al explained that Nutmeg (*Myristica fragrans*) is a promising commodity of in Maluku Region and a potential commodity in current international market demand. Data from the Directorate General of Plantations 2017 estimated that world nutmeg production reaches 25,000 tons per year; Indonesia occupies total production and exports (both for nutmeg and mace) at 75 percent of total world production. The biggest contributor to production in Indonesian region is the Maluku Region at total 70 percent. This is reinforced by data on potential production of nutmeg in Indonesia, especially Maluku, as shown in figure 1.

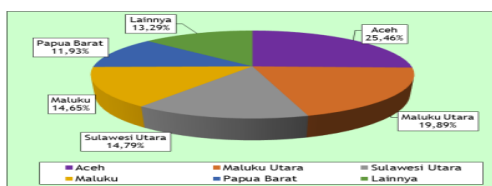


Fig. 1. Nutmeg production in Indonesia. Data source: Agricultural data center and information system of Secretary General of Agriculture Ministry, 2016.

One nutmeg producer in Maluku is the Morela region. This area is located in Central Maluku District. Nutmegs production when the harvest season is very abundant. Nutmeg is usually only taken part of the seeds and flowers (mace) for sale. Meanwhile, nutmeg is only used by some people and the rest just thrown away. Nutmeg meat is usually used by people to make syrup, candy and flavoured tea. Morela village, especially in Village Unit Cooperative (KUD) Toma Siwa, processes nutmeg into nutmeg syrup. This cooperative has been producing nutmeg syrup from 2009 until now. The number of employees is 7 people, consisting of 6 production members, which have the task to produce nutmeg syrup from cooking to packaging, while 1 person records the production results and sales. In addition, cooperative also oversees MSMEs which produce nutmeg flavoured tea. The cooperative has a turnover of more than 150 million / year. The market share is still at level of Ambon City area, especially souvenir shops and some supermarkets.

The production process by KUD is still manual and traditional. Here is the picture of a cooperative that processes nutmeg syrup.

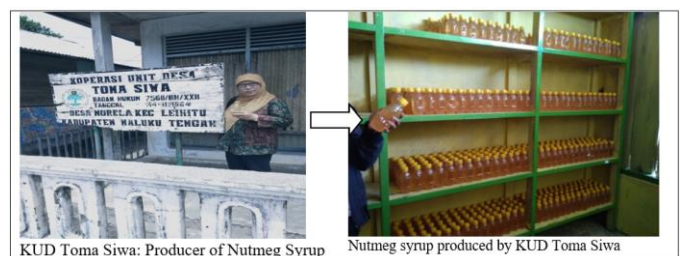


Fig. 2. Production place of Toma Siwa village partners.

The production process of KUD Toma Siwa is traditional. The nutmeg is peeled and coconut grater is used to crush the nutmeg. The crushed nutmeg is squeezed by a taco cloth. The juice is boiled. Here is a picture of production process with a simple tool at KUD Toma Siwa.

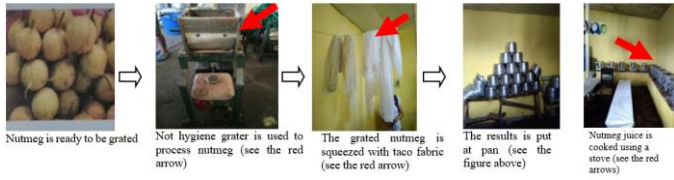


Fig. 3. Production process using manual equipment by KUD Toma Siwa.

Figure 2 shows the production process to produce nutmeg juice. The boiled nutmeg juice is put into a bottle in a still hot condition. Figure 3 shows a tool for cooling process of nutmeg syrup from KUD Toma Siwa.



Fig. 4. Equipment used in cooling process.

The authors want to improve the production process through innovative financial management and nutmeg syrup production machines. Thompson explained that innovation is "the generation, acceptance and application of new ideas, processes, products or services" [2]. Jensen and Webster also said that innovation aspect includes four parts: product, process, organization, and marketing [3]. Based on these definitions, this paper selects innovations in product section.

II. IMPLEMENTATION METHOD

This paper aim is to produce a prototype of engine innovation and financial management. Therefore, suitable method is the Research and development method or known as R&D (Research & Development). The reason why the research and development strategy was chosen is to refer to the opinion of Borg and Gall that "research & development is a powerful strategy to improve the practice [4]. It is a process used to develop and validate educational products." Research and development methods are used to produce certain products. The statement reinforces the reason of research method is consistent with research objectives. Another statement from Borg and Gall is "That in research and development, stages are a cycle which includes a review of various field research findings relating to the product to be developed".

The steps taken in research and development are follows. First, the researcher identifies the problem with Partner at Partner's location to identify what is needed by Partner. After knowing exactly the problems and the most priority needs then the researcher facilitate to make designs activities. Second, researchers design the activities consist of technology products creation, design product trials, design training and assistance to use product, evaluation and monitoring as well as product standardization (PIRT) assistance Third, Researchers from tertiary institutions prepare materials to make their products.

The ready material was made based on a prototype that has been produced from previous studies. Forth, Researchers test the resulting technology products. Fifth, Researchers provide assistance and training to use technology products that have been produced. Sixth, Researchers disseminate products to Partners.

III. RESULTS AND DISCUSSION

The research output should produce automatic machine syrup nutmeg innovation and financial innovation. The contribution of this research to science is to add new knowledge about the innovation of automatic nutmeg syrup machine that still do not have a prototype.

A. Transformation of Financial Management Design and Tool Innovation

The researchers made an innovative design of an automatic nutmeg production machine to solve the nutmeg processing problem of UKMK in Maluku region. The machine is called MESPALA (Nutmeg Paring Machine). The tool is automatic and safe to use. Workers only enter the nutmeg, and then they will proceed on their own, which is to separate the pulp from the nutmeg and water, as shown in figure 3.

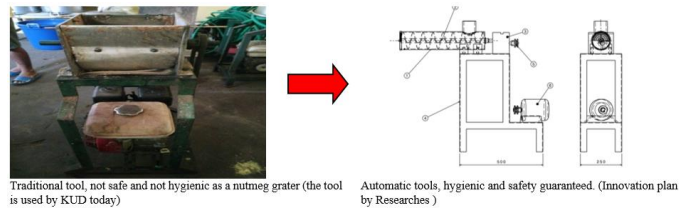


Fig. 5. Tool Transformation designed by researcher.

IV. CONCLUSION

Financial management of UKMK in Maluku, especially in Toma Siwa, tends to have money without recording. They do not calculate how much the production costs and how much profit. For them it is not important that it is important to get money. Based on this description, an innovation below is made to manage finances.

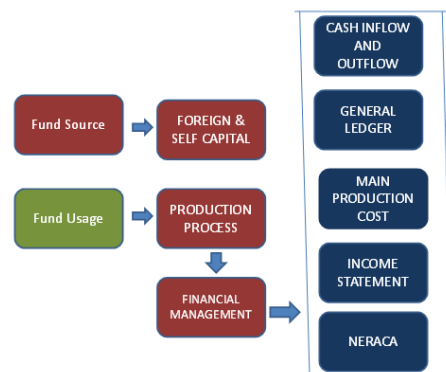


Fig. 6. Transformation of financial management and accounting recording.

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