

## Layout Design of Work Facilities in the Home Industry of the Papuan Community, Wania District

A. Rasul<sup>1</sup>, Ruben Sonda<sup>2</sup>, Subhanudin<sup>3</sup>

<sup>123</sup>Program studi Pendidikan Matematika, STKIP Hermon Timika

Email: [arasulmtka.unm@gmail.com](mailto:arasulmtka.unm@gmail.com)

### Abstract

One of the efforts offered is Designing the Layout of Work Facilities in the Home Industry of the Papuan Community, Wania District. Designing the Layout of Work Facilities in Irul's Home Industry by making spoons from coconut shells and wood. The aim of this service is to increase the potential of a wide open market, a selling price that is able to compete with other craftsmen. So the problem that occurs in this home industry is the lack of conventional equipment used, in the form of drills, saws, planers and sandpaper. The layout of the production room facilities is still not organized, so the production flow is still less effective and efficient. in the production process. Apart from that, the livestock pen, cooking area and production area are still one space without partitions, so it gives the impression of being untidy, so it takes a lot of time to sand the coconut shells. Sanding was carried out three times, starting with coarse, medium and fine sandpaper. This product is marketed by selling it in traditional markets in the Secang area and in several areas outside the city. The methods used to solve this problem are: counseling, training and mentoring. The results achieved in this activity are that the equipment becomes more modern, gets a bigger market, a better layout to support the production process and the amount of production can increase. The waste produced has economic value and is sold to oyster mushroom entrepreneurs as a planting medium, so that the products produced will increase compared to before.

**Keywords:** *Design, Facility Layout, Home Industry*

### Abstrak

Salah satu upaya yang ditawarkan adalah Perancangan Tata Letak Fasilitas Kerja Di Home Industry Masyarakat Papua Kecamatan Wania. Perancangan Tata Letak Fasilitas Kerja Di Home Industry Irul dengan pembuatan sendok dari tempurung kelapa dan kayu. Tujuan pengabdian ini adalah meningkatkan potensi pasar terbuka lebar, harga jual yang mampu bersaing dengan pengrajin lain. Jadi permasalahan yang terjadi pada home industry ini adalah kurangnya peralatan yang digunakan masih konvensional, berupa bor, gergaji, tата dan amplas. Tata letak fasilitas ruang produksi masih belum tertata, sehingga alur produksi masih kurang efektif dan efisien. dalam proses produksi. Selain itu, kandang ternak, tempat memasak dan tempat produksi masih menjadi satu ruang tanpa sekat, sehingga berkesan tidak rapi, sehingga banyak membutuhkan waktu adalah pengamplasan batok kelapa. Pengamplasan dilakukan tiga kali proses mulai amplas kasar, sedang, hingga halus. Produk ini dipasarkan dengan cara menjual dipasar tradisional di wilayah secang maupun di beberapa wilayah luar kota. Metode yang digunakan dalam menyelesaikan permasalahan ini adalah: penyuluhan, pelatihan dan pendampingan. Hasil yang dicapai dalam kegiatan ini adalah peralatan menjadi lebih modern, mendapatkan pasar yang lebih besar, tata letak yang lebih baik untuk menunjang proses produksi dan jumlah produksi dapat bertambah. Limbah yang dihasilkan bernilai ekonomis dengan dijual ke pengusaha jamur tiram sebagai media tanam, agar produk yang dihasilkan bertambah meningkat dari sebelumnya.

**Kata Kunci:** *Perancangan, Tata Letak Fasilitas, Home Industri*

### INTRODUCTION

*Home Industry* This Irus is located in Mawokau Jaya Village, which is one of the villages in Wania District, Mimika Regency. In terms of area, the Secang sub-district consists of 20 villages and is divided into 135 hamlets, 192 RWs and 523 RTs. The population of this sub-district is 1882 people, with 955 men and 927 women. The area of this sub-district is 47.37 km<sup>2</sup> with a land height above sea level of 600 meters above sea level. A tropical climate characterizes

this region, with a division into 2 seasons each year, namely the dry season from January to September and the rainy season from October to March. Mawokau Jaya Village consists of 6 RWs and 13 RTs. The Mawokau Jaya Village area is a developing area. Home Industry Irus Mr. Muhtar has his address at Mawokau Jaya RT 06/ RW 01, Wania sub-district, Mimika Regency, founded in 1992 until now. This Irus Home Industry produces Irus and centhongs. Availability of raw materials in the Home Industry Irus coconut



temourung and wood for the handle. The wood used is sonokeling (good quality), sengan, mahogany obtained from the Papua region. The market potential is spread across various regions such as Papua, West Papua and Wania sub-district itself. Usually orders are at their peak when the fasting month approaches. The superiority of the product produced is one of the best in Wania District. The raw materials for making irrus and centhong are as shown in figure 1.1 below:



**Figure 1.1** Image of raw materials from coconut shells and wood

The problems that occur in this home industry are: the equipment used is still conventional, in the form of drills, saws, planers and sandpaper. The layout of the production room facilities is still not organized, so the production flow is still less effective and efficient in the production process. Apart from that, the cooking area and production area are still one space without partitions, so it gives the impression of being untidy. The production process is inefficient, what takes the most time is sanding the coconut shells. Sanding was carried out three times, starting with coarse, medium and fine sandpaper. The next process is assembly with the tapered handle. Facility layout design aims to support the smooth production process, prevent work accidents and eliminate unnecessary movements of labor and raw materials [1]. (Some work equipment looks like Figure 1.2 as follows:



**Figure 1.2** Work equipment

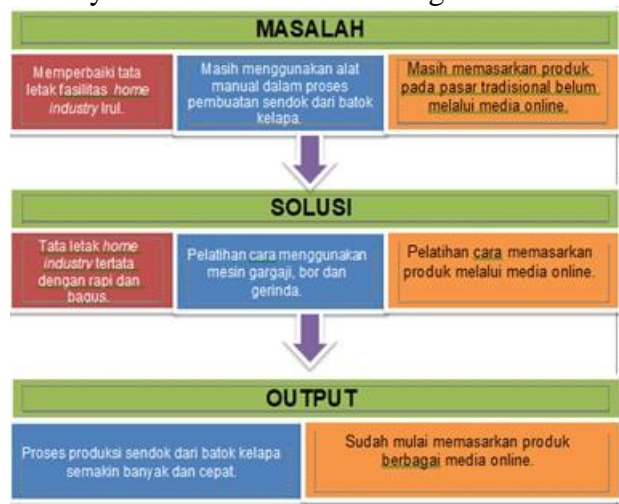
Discarded waste in the form of leftover wood and sanding waste powder, has not been utilized optimally, only used as firewood for cooking and has not been utilized into new products that have high economic value.

The main aim of Community Service for Beginners (PMP) is to help with the problems experienced by partners, so we try to provide production equipment that has technological standards, the tools provided by researchers are: 1) Drilling machines, 2) Sandpaper grinder, and 3) Saw, these are the three tools that the researcher wants to have, because previously this home industry only used manual tools which made the production system less productive both in terms of time and product neatness, which was inefficient. So that the presence of technological tools can help the production process be faster, produce more products and the quality and neatness of the products produced are guaranteed. The methods used to solve this problem are: socialization, training and evaluation.

## IMPLEMENTATION METHOD

The method for implementing this service activity is designing the layout of work facilities in the home industry of the Papuan community in Wania sub-district. The service activities carried out involve all employees in the

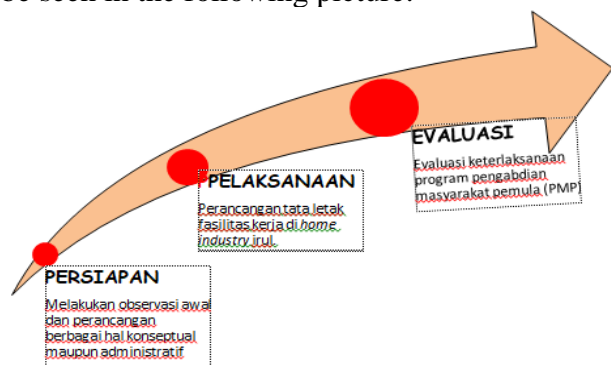
home industry. Training activities on how to use the tools provided by researchers. This service activity is carried out in three stages as follows:



**Figure 4.1** Description of Problems, Solutions and Output from Community Service Activities

The service activities are carried out in collaboration with Irul Pak Muhtar's home industry located at Sempan RT 012/ RW 001 Nawaripi Village/Subdistrict, Wania District, Mimika Regency. This activity involved Mr. Muhtar and 2 of his employees. Training activities were carried out once, as well as handing over tools/machines in the form of saws, drills and grinders.

This service activity is carried out in three stages. The overall stages of the beginner community service program (PMP) activities can be seen in the following picture:



**Figure 4.2** Program Implementation Stages Beginner Community Service (PMP)

The stages of implementation of beginner community service activities (PMP) at Home Industry Irus Mr. Muhtar, Nawaripi Village/Subdistrict are as follows:

**1. Preparation Stage**

The preparation stage consists of planning and designing various conceptual and administrative matters. Conceptual service planning for novice communities (PMP) consists of situation and problem analysis, service objectives, previous service research, and literature study. Apart from that, this service also designs service designs, service methods, as well as the flow and structure of service activities. In administrative terms, this service planning includes designing a service proposal, requesting a letter of assignment, as well as administrative coordination with prospective service participants through the owner of Home Industry Irus, Mr. Muhtar.

The preparation stage consists of planning and designing various conceptual and administrative matters.

- 1) Correspondence and permits.
- 2) The briefing committee consists of 2 students who serve as note takers and documentation.
- 3) Preparation of related documents, such as how to use the machine, complete schedule, daily schedule, rules and regulations.
- 4) Letter of invitation

**2. Implementation Stage**

The implementation stages in beginner community service (PMP) are:

1. PMP with Partners
2. Production increase counseling
3. Production system extension
4. Online marketing training
5. Waste processing training

**3. Follow-up Evaluation/Reporting Stage**

Evaluation is carried out at the end of the beginner community service (PMP) activity through observation of conditions after being accompanied and filling out a partner satisfaction level survey. Mentoring will not be carried out in just 1 period, but can be continued with community service activities for other groups of beginners (PMP). The evaluation relates to points of deficiencies in this service both in technical and administrative terms, points for



improvement, as well as points that need to be improved in the next service.

#### 4. Final Reporting

The final pioneer in this beginner community service (PMP) is:

1. Preparation of reports
2. Preparation of Draft Scientific Publications

### RESULTS AND DISCUSSION

#### A. Activity Results

The Beginner Community Service (PMP) program activities are carried out through three (3) stages, namely preparation, implementation and evaluation. In the preparation stage, the team made all the preparations and made initial observations by communicating directly with Mr. Muhtar regarding the obstacles and difficulties faced by Mr. Muhtar and his employees in carrying out the production process of making spoons from coconut shells. The problem found in the field is that there is still a lack of spoon production because manual tools are still used and the marketing of the product is still within the scope of traditional markets only. After knowing the problems in the field, the research team carried out follow-up planning (preparatory activities), namely seeking modern tools/machines such as saws, drills and grinders to be given to Mr. Muhtar and his employees so that they can speed up the production process, so that more products will be produced. and training on how to market products through online media.

Documentation of initial observations at Mr Muhtar's industrial premises in the picture below:



Figure 5.1 Observation of PMP Activities

Before carrying out training activities, the team first carried out outreach activities. The outreach was carried out by providing an understanding of the importance of utilizing technological tools in the process of making spoons from coconut shells. One way that can be done is providing modern tools/machines such as saws, drills and grinders and training on how to market products through online media. After socialization was carried out, training activities were then held on how to use today's modern tools/machines.

#### 1. Socialization activities

Socialize the importance of using technologically advanced machines in the production process of making spoons from coconut shells in Mr. Muhtar's home industry.

#### 2. Training on how to use tools and how to market products through online media.

a. Session I: introduces and shows how to use technologically advanced tools/machines provided by the research team, along with how to market the products in various media.

b. Session II: Mr. Muhtar and his employees try to use the tool/or machine.

c. Session III: The researcher handed over the tools/machines to Mr. Muhtar and trained him on how to market products through online media.

#### 3. Evaluation.

a. Review whether after having these tools/machines, the production process has become faster and whether the products produced by Mr. Muhtar have increased.

- b. Have the products produced started to be marketed through online media?
- c. What results did Mr. Muhtar achieve from his production?

Furthermore, the service team carried out socialization, training and handed over tools/machines on Sunday 10 September 2023 at Irul Pak Muhtar's home industry, Nawaripi Village/Subdistrict, Wania District, the participants in the socialization and training were the research team along with partners and the community.

The socialization activities, training and delivery of tools/machines are in the picture below:



**Figure 5.2** Socialization and Training and Handover of Tools/Machines

### B. Outcomes Achieved by Beginner Community Service (PMP)

The output targeted in this service is the publication of articles in national journals - Sinta 1-6 at Servant Community Mandala Education, publication of articles in print/electronic mass media at (Kabar Tanah Papua). The implementation of the mandatory and additional output stages has not yet been implemented, because it will be carried out based on the service schedule that has been designed in the proposal in December 2023.

## CONCLUSION

This service activity is designing the layout of work facilities in the home industry of the Papuan community, Wania sub-district. This service activity ran smoothly and achieved the stated goals. This is shown by an increase in the manufacture of spoons from coconut shells and product packaging by 50%, and an increase in product sales by 75%. This service activity has reached 70%, starting from the socialization of service activities, implementation of socialization and training to handover of tools/machines

## SUGGESTION

With this Beginner Community Service (PMP) activity, it is hoped that partners can increase spoon making using the machines that have been provided and have higher promotional power.

## THANK-YOU NOTE

Thanks are especially addressed to research funders or donors. Thanks can also be expressed to those who helped carry out the research.

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