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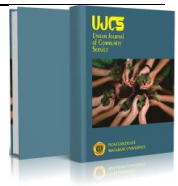

Increasing Productivity, Quality, Hygiene and Marketing of Tofu Processed Products in Gunungpati District, Semarang City

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Abstract: Semarang City is one of the areas in Central Java Province that has various potential superior regional products, one of which is soybean processing in Sumurrejo Village, Gunungpati District. The abundant potential for soybean processing has made Sumurrejo Village designated as a Thematic Soybean Processing Village (OKE Village). There are a total of 16 soybean processing producers divided into 8 tofu producers and 8 tempeh producers, including Berkah Hambida and UD Jaya Makmur which focus on tofu processing. The problems faced by the two producers include the production aspect, namely the lack of standardized and adequate infrastructure, the absence of Appropriate Technology (TTG) and the lack of hygiene in the production area. In addition, problems in terms of quality, marketing and the environment are also still very minimal. There is no standardized Wastewater Treatment Plant (IPAL) and the market segment is still limited to the local and regional scope. The purpose of community service is to overcome problems in terms of production and marketing. More specifically, these problems include aspects of production, quality, hygiene and environmental aspects. The service methods used are through socialization, training, technology application, mentoring and evaluation as well as program sustainability. The results of the service in the 1st year (2024) were to create and implement 1 unit of steam boiler machine, 1 set of food grade stainless steel boiling pans and optimization of the Wastewater Treatment Plant (IPAL).

Keywords: Appropriate Technology, Regional Superior Products, Tofu, Wastewater Treatment Plant.

Introduction

Administratively, Semarang City consists of 16 sub-districts and 177 villages (Semarang City Government, 2024). Each sub-district and village area has different characteristics and superior products. Therefore, since 2016, the Semarang City government has developed Thematic Villages (Anasmk, 2020). This aims to develop various superior potentials in each village area. Gunungpati District as one of the sub-districts in Semarang City consists of 16 villages. Each of these villages also has superior products. One of the superior products that is quite prominent in Gunungpati District is the Soybean Processed Thematic Village, hereinafter referred to as OKE Village, which is located in Sumurrejo Village.

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Figure 1. Tempeh as a Leading Product of Sumurrejo Village

It is called the Soybean Processing Village (OKE) because in Sumurrejo Village there are many UMKM or tofu and tempeh producers where the raw material is soybeans. This is in accordance with the potential that was previously owned and has been running for decades or has been passed down from generation to generation. To support various programs and efforts to develop soybean processed UMKM since 2016 through the Decree of the Head of Sumurrejo Village No. 500/04/VIII/2019 concerning the Establishment of the Joint Business Group (KUB) "OKE" Soybean Processing in Sumurrejo Village, Gunungpati, a Joint Business Group (KUB) OKE (Soybean Processing) has been formed. Based on the data available to date, there are 16 members who are also tofu and tempeh producers, the number of which is balanced with 8 tofu producers and 8 tempeh producers.

Figure 2. Tofu and Tempeh Processing from Soybeans in Sumurrejo Village

Tempeh producers are generally spread across several places in Sumurrejo sub-district. However, tofu producers occupy a special area provided by the Semarang City government, namely in Karang Geneng Village, RT. 06, RW. 01 Sumurrejo Village. This is related to the environmental impacts that may arise (tofu waste, air pollution) so that the location of the tofu factory is placed quite far from residential areas, close to the river flow, so that it is easy to handle. In accordance with the Semarang City Medium-Term Development Plan (RPJMD) for 2021-2026 in the 2nd mission, it is explicitly explained that the Semarang City government has a mission to increase the potential of a competitive local economy and stimulate industrial development based on research and innovation. This is carried out in order to develop superior regional products and increase economic added value.

Meanwhile, as reported by https://sumurejo.semarangkota.go.id/kp-tematik and various other relevant sources, in general, tofu and tempeh producers in Indonesia and in Sumurrejo Village still find various obstacles in the soybean processing business, including:

1. The concept of developing tofu and tempeh businesses with consideration of hygiene, sanitation and quality aspects is still very minimal (Indriyati et al., 2021). Tofu and tempeh business actors are still focused on increasing the quantity/amount of production without paying attention to the important aspects mentioned above.
2. The community still has difficulty in promoting and marketing and efforts to develop soybean processing businesses including tofu and tempeh (Parolita & Gayatri, 2024). The majority of tofu and tempeh are only on a local or regional scale, not yet on a large national scale or even international exports.
3. The absence of integrated, effective and efficient Wastewater Treatment Installation (IPAL) media in preventing hazardous chemical residues before they reach the surrounding environment (Hafiz, 2023).
4. The majority of infrastructure, cooking utensils for tofu and tempeh are still traditional and simple. On the one hand, it maintains cultural values and uniqueness, while on the other hand it is very risky for health, cleanliness and hygiene risks if not carried out optimally (Pambudi, 2022; Khumaedi et al., 2024).
5. Tofu and tempeh processing is still monotonous and not varied (Safitri et al., 2024). This causes the productivity of tofu and milkfish business actors/producers to be still low, not yet having an innovative and creative spirit to the maximum.
6. Lack of continuous, periodic, ongoing and sustainable community development and empowerment (Ilah et al., 2024). Community empowerment activities are often carried out only ceremonially without further action or monitoring and evaluation.

7. Competence, insight, knowledge and innovation and creativity capabilities of tofu and tempeh business actors are still limited (Samtono et al., 2024).

Method

For the implementation of activities, five methods are used, namely:

Socialization

The initial stage carried out is to conduct socialization. The intended socialization is given to target partners and students who will be involved as a form of implementation of the Independent Learning Independent Campus (MBKM) program. Socialization is carried out so that all parties involved have one vision, mission, concept and goal that together implement this community service and empowerment program. The existence of socialization is expected to be a media and forum for servants, partners and students involved to have the same Work Reference Framework (KAK).

Training

In this activity, partners will be equipped with knowledge, insight and skills according to the problems, the expected solutions and based on the output targets. The training carried out includes, among others, in the fields of production and marketing. In the 1st year of the total submission for 3 years, it is to make and implement 1 unit of steam boiler (steam boiler) which is applied to Partner 1. Then, make and implement 1 set of boiling pots (4 pieces) from food grade stainless steel which is applied to Partner 1. Meanwhile, there is also making a wastewater treatment plant (IPAL) in the form of Making Biodigesters (Partners 1 and 2). In addition, partners will be provided with how to use and operate it. Training in all aspects is provided by the service team together with students so that they can support the achievement of the Main Performance Indicators (IKU) that have been set by the government.

Application of Technology

The implementation of technology and innovation to partners is an important part of the Entrepreneurship-Based Empowerment (PBK) program. The goal is for partners to have added value (added value) and high economic value (economics value) for the products they sell to partners 1 and 2 who both process and produce and market tofu. The technology and innovation provided also aims to overcome various existing partner problems and be able to increase productivity, quality, hygiene and marketing of tofu products. Partners will later have a competitive advantage and have high business competitiveness.

Mentoring and Evaluation

After implementing technology and innovation, mentoring efforts are the next stage that must be implemented. This stage is a form of control so that partners can operate or use the technology and innovation that has been provided. Mentoring is carried out intensively and will be evaluated periodically by the proposing team.

Sustainability of the Program

After implementing technology and innovation, mentoring efforts are the next stage that must be implemented. This stage is a form of control so that partners can operate or use the technology and innovation that has been provided. Mentoring is carried out intensively and will be evaluated periodically by the proposing team.

Result and Discussion

In the implementation of this community service program, efforts are made to solve problems with solutions that are effective, appropriate and targeted. Solving problems in aspects of production, quality, hygiene, environment and marketing is an important effort in increasing the effectiveness, efficiency, productivity and profitability of partner businesses. There are 2 (two) partners in this program, namely Berkah Hambida and UD Jaya Makmur which produce processed tofu in Sumurrejo Village, Gunungpati District, Semarang City.

Figure 3. Coordination and Field Review at Mitra Berkah Hambida and UD Jaya Makmur

Figure 4. Revitalization, Improvement and Optimization of IPAL Functions

Figure 5. Floor Plastering and Construction of House/Steam Boiler Operational Site at Berkah Hambida Production Site

This community service program is a multi-year period for 3 years from 2024-2026. In 2024, this is the implementation of the 1st session. In physical activities, the manufacture and implementation of 1 steam boiler unit will be carried out to partner 1 Berkah Hambida. Before the operation of the tool/machine, coordination is carried out with partners regarding the layout, function, benefits and general description of the operation of the steam boiler. Currently, the service team is preparing and building a house/operational place for the steam boiler which is right next to and directly adjacent to the Berkah Hambida production site. The construction of this house/operational place aims to increase production effectiveness and efficiency. In addition, this effort is also to overcome the problem of the boiling furnace at partner 1 still using wood fuel, wasting fuel, the place is integrated with other production processes so that production smoke has the potential to interfere with employee health and affect tofu products. The steam boiler is also being designed and assembled. Before being implemented to partners, a technical operationalization test will be carried out by a service team with various disciplines/expertise, including mechanical engineering, information systems and culinary arts.

In addition, in the 1st year, the assembly and application of 1 set of boiling pots (4 pieces) made of food grade stainless steel will also be carried out, which will be applied to partner 1. Previously, partner 1, namely Berkah Hambida, still used a cement wall tub as a place to store boiled soybean porridge, so that it was less guaranteed in terms of cleanliness, quality and product hygiene. In addition, handling environmental aspects is also an important concern in this service program. The construction and optimization of the function of the Wastewater Treatment Plant (IPAL) was carried out because so far the IPAL has not been operating optimally so that it has the potential to pollute the environment.

The application of this technology and innovation is very relevant to answer various aspects of the problems faced by Berkah Hambida and UD Jaya Makmur partners. Various aspects of these problems include aspects of production, quality, hygiene and the environment. Identification and prioritization of partner problem solving are very important considering that this community service program is multi-year for 3 years from 2024-2026. This identification is carried out in order to achieve a solution that is solutive, effective and on target based on the existing priority scale. This service program certainly cannot run optimally if it is carried out by the implementing team alone. Synergy, cooperation and collaboration with various stakeholders are very important starting from partner 1 Berkah Hambida, partner 2 UD Jaya Makmur, Sumurrejo Village, the surrounding community and so on. The surrounding community is also actively involved because this community service program aims in the long term not only to benefit partners but also the surrounding community. The impacts received are very diverse, both financially, socially and others. Financially, with the technology and innovation that is applied, it greatly helps partners in carrying out production activities, business expansion, expanding marketing distribution networks and entering global business competition to product exports. Designing Appropriate Technology (TTG) such as steam boilers and boiling pots made of food grade stainless steel will be able to increase the effectiveness, efficiency, productivity and profitability of the business. This will also have a multiplier effect including on employees who mostly come from the surrounding community. Feeling that the work is lighter, cleaner, faster and able to optimize production capacity. In addition, technology and innovation such as optimizing IPAL also have a major impact not only on solving environmental problems, but also on the surrounding community. Environmental pollution from tofu production activities can be minimized, more environmentally friendly because it is in the form of a Biodigester or biogas reactor.

Conclusion

The community service program in the scope of Empowering Superior Regional Product Business Partners, this Entrepreneurship-Based Empowerment Scheme will last for 3 years starting in the 1st year in 2024. The 1st partner is Berkah Hambida, while the 2nd partner is UD Jaya Makmur, all of which focus on being tofu producers in Sumurrejo Village, Gunungpati, Semarang City. The focus area on the food sector seeks to overcome various problems so as to produce solutions that are solutions that are beneficial to various parties. The priority problem aspects that will be resolved in detail are production, quality, hygiene and environmental aspects. The resolution of these problems includes making and implementing 1 steam boiler unit for partner 1, 1 set of boiling pans (4 pieces) made of food grade stainless steel which is applied to partner 1 and assembling a Wastewater Treatment Plant (IPAL) in the

form of making a Biodigester for partner 1 and partner 2.

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