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SOCIALIZATION OF THE USE OF SKYLIGHT ROOFS FOR LIGHTING IN RESIDENTIAL HOUSES IN FOBARU VILLAGE, NORTH TIDORE DISTRICT, TIDORE ISLANDS CITY

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Abstract:

Background. Tidore Islands City in North Maluku Province faces limited access to natural lighting in residential houses, especially in coastal and hilly areas, as seen in Fobaharu. The simple design of houses with few openings leads people to rely heavily on artificial lighting even during the day, thereby increasing electricity consumption and economic burden, especially for low-income families. Initial surveys indicate limited public knowledge of skylight technology as an energy-efficient lighting solution.

Aims. This program aims to reduce dependence on electricity by using sunlight, increase literacy in environmentally friendly technologies, and empower the community to develop skylight innovations as local business opportunities.

Methods. The activities carried out include socialization and theory training.

Conclusion. Despite obstacles to access to the location and to the mobilization of equipment, this program is expected to increase the community's knowledge, skills, and independence in using skylight technology to improve quality of life and encourage energy sustainability.

Keywords: Natural lighting, Eco-friendly energy, Fobaharu, Tidore Islands

INTRODUCTION

The city of Tidore Islands in North Maluku Province is one of the areas that has challenges in accessing residential lighting. Based on data from the Central Statistics Agency (BPS) and local government reports, many houses in Tidore, especially in coastal and hilly areas, lack optimal access to natural light. Most of these houses have a simple architectural design with limited ventilation and openings, so they rely on artificial lighting even during the day. This not only increases electrical energy consumption but also burdens household budgets, especially for low-income people.

In addition, the results of the initial survey show that the people of Tidore are generally unfamiliar with simple technologies, such as skylights that use sunlight as a natural lighting source. The low level of literacy regarding energy-efficient lighting technology and the lack of socialization around its use are the main inhibiting factors in its adoption. Some of the identified partners include community groups consisting of:

1. **Low-Income General Society:** This society is burdened with high electricity costs due to the use of lights during the day. They also have limited information about alternative natural lighting technologies.
2. **Artisan and Small Business Actors:** Many small business actors in the household sector, such as handicraft manufacturing or snack businesses, work in environments with minimal lighting. This condition affects their productivity and work efficiency.

The problems at the partnership location include difficulty accessing the area and constraints on mobilizing equipment to it.



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- 1) household lighting needs to reduce the cost of electrical energy, especially among low-income people.
- 2) **Increasing Environmentally Friendly Technology Literacy:** Educating the public about the importance of using environmentally friendly technology to create energy sustainability and support a better quality of life.
- 3) **Empowering the community through technological innovation:** Encouraging the community to utilize skylight technology not only for personal needs but also as a business opportunity for new potential entrepreneurs in the field of local skylight production and marketing.

The focus of this service is Knowledge and Skills Improvement. Training the public on the concept and benefits of skylights, including how to install and maintain. This training will include theory and hands-on practice so that people can understand and apply this technology independently.

METHOD

Production Field:

1. Identifying suitable local raw materials for the production of simple skylights.
2. Conduct skylight making training to partners using easy-to-adopt tools and techniques.
3. Conduct product testing of the training results to ensure the quality and functionality of the skylight.

Management Field:

1. Provide business management training to partners, including financial management, stock recording, and production planning.
2. Providing direct assistance in designing an efficient business management system.

Marketing Field:

1. Train partners to leverage social media as a marketing platform.
2. Assist partners in the creation of product catalogs and promotional materials.
3. Establish cooperation with local building shops or distributors to distribute skylight products.

RESULTS AND DISCUSSION

Preparation Stage

Preparation stage Socialization of the use of skylight roofs for lighting in residential houses in Fobaru village, North Tidore district, Tidore Islands City. The initial preparation is to coordinate with the Fobaru Village Head at the Village office, about the place where the socialization is carried out, and then the preparation of the event, such as the preparation of the sound system, Infocus, consumption, installation of activity posters, and other necessary preparations.



Figure 1. Discussion of the Service Team with the Fobaru Village Head

As a result of the discussion with the Fobaharu, it was agreed that several things will guide the team in carrying out community service, including:

1. The implementation of the socialization of the use of skylight roofs for lighting in residential houses to the people of Fobaru village was carried out during the day.
2. The implementation of socialization activities took place in the Hall of the Village Office
3. The method of implementing socialization is a lecture activity/providing material on the use of skylight roofs for lighting in residential houses, then continued with discussion and question and answer activities from the participants of the socialization activity and guided by a moderator from a lecturer of the Architecture Study Program.
4. The method of implementing the socialization of Community Service activities in Tadenas Village by the Architecture Study Program was carried out in a panel by the lecturers of the Architecture Study Program

5. The activity ended with the handing over of plaques from representatives of the Architecture Study Program, Faculty of Engineering, Khairun University to the Fobaru village head and photos with the speakers and Socialization Participants.



Figure 2. Fobaru village hall celebration begins socialization activities

Implementation Stage

The implementation of socialization activities was preceded by remarks from the Fobaru village head then continued with an introduction from representatives of the Architecture Study Program, Faculty of Engineering, Khairun University.



Figure 3. Introduction from the Architecture study program representative before starting the socialization activity



Figure 4 : Socialization of the use of skylight roofs for lighting in residential houses by members Service Team

After remarks from the Fobaru village head and continued with an introduction from representatives of the Architecture Study Program, Faculty of Engineering, Khairun University, the service team began to socialize the use of skylight roofs for lighting in residential houses to the people of Fobaharu. In the socialization of the use of *skylight* roofs for lighting in residential houses to the people of Fobaharu, it was found that there is still a lack of residential houses in the village that use sunlight using *skylights*.



Figure 5. Some Houses in Fobaru Village

In addition to residential houses, the socialization of the use of *skylight* roofs for lighting also provides about the importance of using *skylights* on school roofs in Fobaharu's village.



Figure 6. School Building in Fobaru Village

CONCLUSION

This program not only provides solutions to lighting problems in residential houses but also opens up opportunities for economic empowerment for the people of Tidore, especially in Fobaharu's village. Thus, the socialization of the use of skylights is expected to be the first step to create a more energy- and economically independent society, as well as support sustainable development in North Maluku Province. Through this activity, the community is expected to reduce dependence on artificial lighting, increase environmental technology literacy, and empower the community through technological innovation.

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