

## DOMESTIC ELECTRICAL INSTALLATION TRAINING TO SUPPORT THE DEVELOPMENT OF SIRNAJAYA TOURISM VILLAGE

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### Abstract

The potential that is being developed by Sirnajaya Village, which is located in Sukamakmur District, Bogor Regency, is through the development of tourism both natural tourism and cultural tourism. This tourism development has also opened up business fields with the existence of food stalls and souvenir shops in the tourist area. These stalls and souvenir shops have not been managed properly, even though schematically there are partners as managers of Sirnajaya tourism village, namely Badan Usaha Milik Desa (BUMDes). With the development of the area, what must be of concern for the manager is the comfort and safety of the supporting facilities. There is a potential hazard to visitors and kiosk owners regarding cable networks and short circuits. There is a huge potential for a fire to occur because several stalls or kiosks were found to take electricity from residents' houses by pulling the cables themselves. Because generally people who do electricity do not understand electricity or are self-taught, so the risk of fire due to short circuits can occur. The method of implementing this community service is by providing material in a presentation and direct training to kiosk or stall owners in the tourist area of Sirnajaya Village regarding electrical installations that meet security and safety requirements, including knowledge of sockets, cables, cable insulation, and fuses / MCB . The result of the training is to increase the understanding of safe electricity according to standards.

**Keywords:** BUMDes, Tourism Village, Electrical Installation, Fire.

## I. INTRODUCTION

Sirnajaya Village is located in Sukamakmur District, Bogor Regency, designated as a growth center village in the 2005-2025 Regional Spatial Plan (RTRW) for Bogor Regency. The position of Sirnajaya Village is quite strategic in Sukamakmur District which is passed by the Puncak 2 route, which is the road that connects Sentul, Bogor Regency with Cipanas, Cianjur Regency.

The potential that can be developed is Situ Rawa Gede tourism and a typical coffee plantation, namely Sirnajaya Arabica coffee. Currently, the development of tourism objects in Situ Rawa Gede is quite promising, especially the number of tourists who come both from the Sukamakmur District environment and other areas such as Bogor, Bekasi, Depok, Cianjur, Jakarta.

The management and development of the natural tourism area in the Rawa Gede lake are currently carried out by Village Owned Enterprises (BUMDes). BUMDes according to Law number 32 of 2004 concerning Regional Government are village business institutions managed by the community and village government to strengthen the village economy

and are formed based on the needs and potential of the village [1].

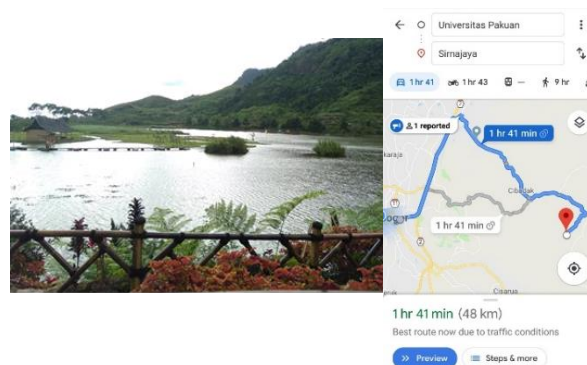


Fig. 1 Location of Sirnajaya Tourism Village

Development towards the tourism industry requires the involvement of various parties so that the area can develop rapidly. Food stalls and souvenir shops selling the featured local commodities are supporting facilities that involve the local community. Some of the problems identified from the existence of stalls and kiosks in Sirnajaya tourist village are :

1. The installation of electrical installations is carried out by shop owners who lack electrical knowledge so that the electrical installation is poor or not up to standard.
2. The use of non-standard cables, such as cables that are too small or the use of audio cables used for electricity, are at risk of overheating it.
3. The use of improper insulation on the cable connection either from the material or technique of isolating it.
4. Use of multiple outlets in the socket that uses the T-plug stacked more than one, which is a risk of causing fire [2].

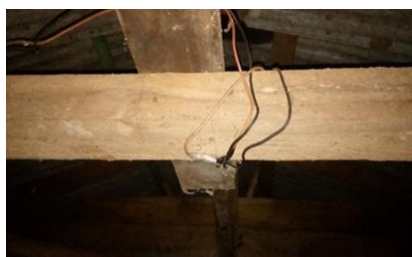


Fig. 2 Example of Electrical Installation at a stall in Sirnajaya Tourism Village

The purpose of this service activity is to increase the understanding of kiosk or stall owners regarding standard electrical installations so that the risk of fire is expected to be minimized [3].

## II. METHODS

In carrying out the service and achieving the objectives of the activity, a work procedure for service activities is drawn up as follows :

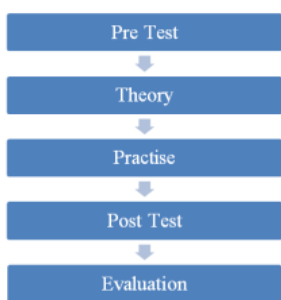


Fig. 3 Community Service Work Procedures

Giving theory is done through presentations which include [4], [5], [6]:

1. Electricity standard based on PUIL (General Regulation of Electrical Installation);
2. Common tools and materials for lighting electrical installations;
3. Work safety in electrical installation work;
4. Cable type NYA, NYM, NYY;
5. Current Conducting Capacity (KHA);

6. Cable insulation;
7. Electrical safety devices (fuse, Miniature Circuit Breaker / MCB, Earth Leakage Circuit Breaker / ELCB).

Practical activities by dividing participants into several groups. Each group consisting of 2 people. The purpose of creating a group with only two members is so that the participants can understand arranging electrical installations following security and safety standards. Here, a simple single-phase electrical installation is practiced here [7].

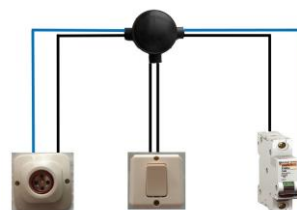


Fig. 4 Circuit Drawing for Practice

Materials provided in this activity are:

1. Plywood Board;
2. Lamp Fittings;
3. Stop Contacts;
4. Single Switch;
5. MCB;
6. NYM cable.

The pre-test and post-test procedures are assessments to evaluate activities to measure participants' understanding of the material presented. Participants filled out a questionnaire by answering questions related to the training material provided. The next step is to monitor electrical installations at stalls/kiosks owned by training participants, to ensure that the output of the activity is electrical installations that comply with security and safety standards.

Table 1. Questionnaire

No.	Statement	VP	P	G	VG
1.	Understanding of the types of cables for electrical installations at home				
2.	An understanding of cable sizes for electrical installations at home				
3.	An understanding of the types of cable connections				
4.	An understanding of the types of electrical insulation				
5.	Understanding of electrical protection equipment at home				

**Abbreviations :**

- VP = Very Poor;
- P = Poor;
- G = Good;
- VG = Very Good.

**Score :**

- Score 2 = Below Average;
- Score 3 = Average;
- Score 4 = Good;
- Score 5 = Very Good.

The activity feedback score limits are as follows :

- Score 2 = Below Average (number of good + very good < 60%);
- Score 3 = Average ( $60\% \leq$  number of good + very good < 70%);
- Score 4 = Good ( $70\% \leq$  number of good + very good < 80%);
- Score 5 = Very Good (number of good + very good  $\geq$  80).

**III. RESULTS AND DISCUSSION**

The program achievement from this electrical installation training activity is to step up in the understanding and skills of participants who are owners of kiosks/stalls in Sirnajaya Tourism Village. In the practical session, not all participants from each group understood and were successful at the testing stage of the series made. There are still several groups that have errors in arranging this electrical installation. For groups that have not succeeded, they will be helped by checking their mistakes and explaining how to fix them. In the end, all groups can assemble electrical installations correctly, following safety and security standards.

a Theory session is as shown in the following picture:



**Fig. 5 Theory Session**

While the practical sessions in several groups are shown in the following figure:



**Fig. 6 Practical Session**

Before and after the training, participants were asked to fill out a questionnaire to determine the level of understanding of the participants from the training material provided.

The following table is the result of the questionnaire recapitulation of all training participants before the training.

**Table 2. Pre Test Recapitulation**

No. Statement	VP	P	G	VG
1	0	4	4	0
2	0	6	2	0
3	1	5	2	0
4	0	5	3	0
5	1	5	2	0
<b>Total</b>	<b>2</b>	<b>25</b>	<b>13</b>	<b>0</b>
<b>%</b>	<b>5%</b>	<b>63%</b>	<b>33%</b>	<b>0%</b>

From table 2 above, the processing is carried out from the results of filling out the questionnaire by the training participants. The results of the questionnaire processing in Table 2 showed a score of 3 (32.5%) for the pre-activity (good + very good <60%), which means that the participants' understanding of the material before the training was lacking.

The results of the questionnaire recapitulation of all training participants after training are shown in the following table.

**Table 3. Post Test Recapitulation**

No. Statement	VP	P	G	VG
1	0	2	6	0
2	0	2	3	3
3	0	1	5	2
4	0	0	7	1
5	0	2	5	1
<b>Total</b>	<b>0</b>	<b>7</b>	<b>26</b>	<b>7</b>
<b>%</b>	<b>0%</b>	<b>18%</b>	<b>65%</b>	<b>18%</b>

Table 3 shows the results of the questionnaire processing that the score after training was 5 (82.5%), meaning that the participants' understanding was very good (number of good + very good  $\geq 80\%$ ), experiencing a significant increase compared to before training.

From the recapitulation table, a graph is made as shown in the following figure. Figure 7 is a graph of understanding of the material before training is held.

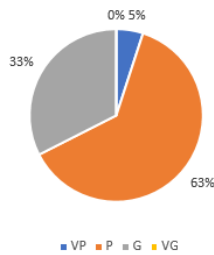


Fig. 7 Graphics of Understanding Training Materials (Pre Test)

Figure 8 is a graph of the participants' understanding of the material after the training.

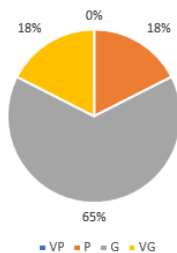


Fig. 8 Graphics of Understanding Training Materials (Post Test)

The training participants are given a certificate indicating that they have attended basic electrical installation training according to safety and security standards. At the end of the training, an electrical installation in a stall that did not meet the standards installation was a selected to be repaired, with the hope that it could become an example for other locations.



Fig. 9 Unstandard Installation Repair



Fig. 10 Participants Receive Training Certificates

#### IV. CONCLUSIONS

Community service activities in the tourist village of Sirnajaya went well and received a fairly positive response from the community and support from the local village government. Participants' understanding of electrical installations and the behavior of using tools that meet standards has increased.

#### Acknowledgment

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