

# Complement Facilities for Utu Village to Improve Sense of Security

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**Abstract.** The Banjar Adat Utu had many potentials i.e. in farming laying hens, pigs, and cattle. In the agriculture sector, there is organic rice or brown rice and developing durian, avocados, etc. The potential for a tourist village is huge because it is close to the Jatiluwih tourist village. Based on the results of the survey and discussions with the Utu village stakeholders, the village's progress has been very rapid. One of them is that there are many roads in and out of the village, and there are several large and small (rats) roads that need to be handled. Thus, the Utu village needed a complement with facilities to make it comfortable for tourists in a sense of security. For that, the team has a program empowering the community to develop a surveillance system with a workshop. In this program, the team introduces a long-distance surveillance system, and how to design and implement it. The output of this program, all workshop participants had adequate knowledge, skills, and ideas on how to use cutting-edge technology to solve problems. This program, expects the community to solve their problems completely and sustainably.

**Keywords:** Utu Village, Tourist Complement Facilities, Empowering Through Workshop, Technology for Distance Surveillance

## 1 Introduction

The state of affairs analysis of the rapid development of the Utu village, Bali in line with the progressive development resulted in emergence of new problems that did not previously occur. The main problem is that due to openness, access to the village has become easier and there are many alternative routes. The development of the village towards a tourist village changes the land cover of the village area, the construction of villas, restaurants, and guest houses brings in quite a lot of workers to this village area, so the environment needs firmer supervision. Moreover, the village's location is close to the famous tourist village of Jatiluwih (Pantiyasa & Darsana, 2023; Prasiasa et al., 2023; Skolastika et al., 2023), so many foreign and domestic tourists pass through Banjar Adat Utu. Routine supervision of residents by stakeholder interpreters is incidental and limited. For this reason, the team has conducted a field survey and has held in-depth discussions on village problems and formulated solutions.

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The following summary are results of the team’s survey regarding the situation analysis of the Utu village, Penebel-Tabanan, Bali: (1) Clean drinking water program. This problem arises because water sources in the village area still contain sulfur, even though residents use PDAM water. The solution to this program is to provide water filter equipment such as refillable gallon water where the sulfur content is already very low. This cannot be done yet because it requires capital and operational filtering costs (Bambang et al., 2022; Schwarz et al., 2020); (2) Program for processing residents’ wet waste and leftovers from traditional ceremonies. This problem is the same in all places, where large areas of land (landfill) are needed to dry wet waste, even though the waste will be burned in an incinerator. An integrated dryer system with an incinerator still requires temporary waste storage, capital, and operational costs (Eprianti et al., 2021; Murniati et al., 2021; Widiyanto & Fitriyani, 2021); (3) Programs related to animal husbandry and agriculture are directly linked to district and provincial offices; (4) The tourism village development program has been running in line with the progress of Jatiluwih tourism. The Utu village requires specificity in exploring the characteristics of tourism products that will become mainstay tourism products. It is necessary to organize tourist spots and facilitate them with facilities, including similar handicraft souvenir products (Hadi, 2024; Rohman et al., 2022); (5) Programs related to regional security have become an important current issue because concerns are starting to emerge regarding the ownership of residents and villages. The Utu village has carried out some patrols but they are very limited (Rydzik & Kissoon, 2024). The team and the Utu village stakeholders agreed to a proposed solution to the current problem in line with the progress of Utu village to become a tourist destination by complementing facilities in a sense of security.

2 Methodology

As described in the introduction above, the team followed a survey to understand the current situation of the Utu village, break down the problems, and empower the community to solve their problems. For that reason, the team had to profile the Utu village by presenting the following Table 1 below.

**Table 1.** Profiling of the Utu village through survey

| Partner items                                                                                                                                | Economic-tourism potential                                                                                                                                                                                                                                       | Organizational structure                                                             | Infrastructure                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| A small village at Babahan, Penebel district, Tabanan regency, Bali Province. (8°22'58.7"S 115°08'51.9"E) 1 hour 10 minutes/ 42 km from DPS. | Laying chicken farming, pig farming, cattle farming, fighting cock farming. Organic rice farming, fruit. Bali starling monitoring spot (conservation) Tour guide Cooking class (Balinese cuisine) -Sport tourist (bubble canal) -Villa, restaurant, guest house. | Headed by Bendesa and subordinates (customary clans), Support by a local bank (LPD). | Hot mix asphalt roads, stone/dirt roads, water pipes, Service facilities - PLN, PDAM, Internet |

A workshop was held regarding the latest monitoring technology of surveillance which could later be implemented. The workshop participants were partners, the Utu community, and the team (students). The workshop discussed the selection of monitoring technology, materials, brands or vendors, installation methods, capable personnel, budget, and implementation plans. The workshop material specific on introducing internet technology is designed so that it is light and targeted and meets partner needs regarding surveillance systems with a small curriculum consisting of five modules. Assessment of work-shop results was carried out to measure the participant's level of understanding. The assessment method is taken directly when participants answer and practice together. The workshop curriculum on introduction to a distance surveillance system can be seen in Table 2.

**Table 2.** Workshop curriculum on introduction to a distance surveillance system

| Target learning achievement/<br>competency module                                               | Material/<br>subject matter                                                                                 |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| (1) Able to understand basic concepts of computer networks.                                     | Network topology, OSI and TCP/IP WAN internet models, topology types, TCP/IP protocol IP address interface. |
| (2) Able to understand camera technology in monitoring                                          | Analog and IP cameras, installation types, advantages and disadvantages, recording tools                    |
| (3) Able to understand digital communication media and interfaces, analog and digital channels. | Wired/coaxial media, fiber optic, wireless, interface type, media converter                                 |
| (4) Able to perform fiber optic termination and splicing with good attenuation results          | Termination type, Fast Conn SC UPC type, pigtail type.                                                      |
| (5) Capable of terminating and splicing fiber optics with good attenuation results.             | Connecting drop core and pigtail cables.                                                                    |

**Remarks:**

|                                             |                                    |                                  |                           |
|---------------------------------------------|------------------------------------|----------------------------------|---------------------------|
| Learning Achievement:                       | Learning Method:                   | Assessment Results:              | Time Schedule:            |
| Can explain the material and practice well. | Presentation, simulation practice. | Questions and answers, practice. | Sunday, date, 9.00-13.00. |

### 3 Result and Discussion

Implementation of community service in Utu village has been implemented according to the dedicated partners program. The programs that have been implemented are as follows. Fulfillment of partners' priorities and needs according to the budget approved by the institution. Empowerment of partners and the community of Utu village related to the proposed decision program. The method for implementing partner empowerment was carried out by workshops related to the community service theme i.e., namely

introduction to internet technology, monitoring technology, fiber optic technology, installation, and application settings. Carried out directly in practice (direct-empowering), namely being directly involved in the installation and operation process for partner needs, as well as program sustainability in the form of maintenance and repair of equipment. Evaluate service results to get feedback in the form of distributing questionnaires.

As Table 2 above, the workshop curriculum on introduction to distance surveillance systems was carried out for 12 persons of participants. In general, workshop participants' understanding of all modules was good enough. Especially for modules number 4 and number 5, requires sufficient proficiency with a high level of concentration related to visual sharpness and hand breadth, because working with small fiber optic materials is easy to break. From the workshop conducted to empower partners, a summary was carried out to be able to clarify whether the results of the activities were appropriate and able to answer partner problems with the solutions that had been provided. The results of activities are also evaluated for program sustainability. The following Table 3 summarizes the results of partner empowerment. The following Figure 1 are workshop activities.

**Table 3.** Summary of partner empowerment through workshop

| Partner problems                                                             | Solution provided                                                                                                                                                                                                                                                 | Results and sustainability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Partners do not understand internet technology related to remote monitoring. | Hold workshops introducing internet technology, monitoring technology, fiber optic technology, installation, and application settings. Done directly with practice (direct-empowering), that is, directly involved during the installation and operation process. | Twelve workshop participants understood and were able to:(1) The basic working principles of the system required. (2) Choose the right technology to answer the problem. (3) Choose the right and reliable products related to the required system. (4) Make needs planning and estimate the required budget (RAB). (5) Carrying out installation, checking errors, and setting minimum parameters. (6) Based on the knowledge that has been obtained, be able to provide advice on similar problems to the community. |



**Figure 1.** Workshop documentation

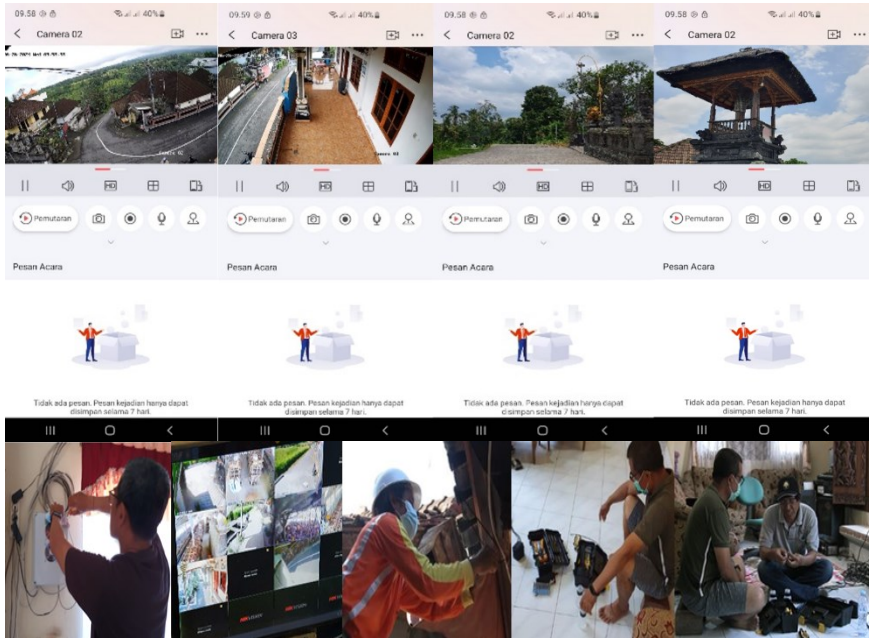
Photograph by I Ketut Swardika, permission by team partners in Utu village and Electrical Engineering Department community service team

Because this program is set up as a short program, empowering a community with high technology is a challenge. However, the team has worked to do its best to succeed in this community service. Table 4 below is a summary of community service programs that have been progressing for Utu Village. For sustainability, mentoring activities are carried out after the completion of training activities. Mentoring is especially needed for monitoring program operation activities. Mentoring is an activity to strengthen workshop material. Mentoring activities will be carried out periodically, namely visiting partners directly at predetermined times, or adjusted to the partner's requests.

**Table 4.** Summary of community service program

| Partner Problems                                                                                  | Solutions Provided                                                                                                                                        | Results and Sustainability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Partners need remote monitoring to support and facilitate the Utu tradition as a tourist village. | Concluding the results of the ongoing workshop by creating a budget-planning (RAB), forming an implementing committee, and supervisory coordination flow. | Workshop participants understood and were able to: (1) Able to form an executive committee with members who have expertise in the field of electricity; (2) With the team, make an RAB for equipment procurement as a proposed proposal; (3) Able to create supervisory coordination guidelines with the implementing committee; (4) Able to carry out administration of equipment by using access rights, sharing devices with entitled members, and inserting and deleting devices related to the system; (5) Able to provide advice or act as a resource regarding the system being built to other parties who need it. |

Because partners feel very helpful with this activity and there are proven methods that can be applied in other places. With these complementary facilities, Utu village is a choice closest to the Jatiluwih tourist attraction to enjoy coffee, culinary delights, and safe glamping-villa accommodation. So, tourists don't need to return to Ubud to stay overnight, as guides usually do with their tourists. Figure 2 below shows the results of activities from the workshop.



**Figure 2.** Activities resulting from the workshop

Photograph by I Ketut Swardika, permission by team partners in Utu village and Electrical Engineering Department community service team

## 4 Conclusion

The community service has been carried out to the team partners in Utu village. Several activities have been done to fulfill partner needs, and it can be concluded that partners' knowledge problems are solved by empowering partners with workshop activities. This activity has been implemented and proven to provide great benefits for partners. The partner's problem of having a monitoring system is solved by empowering partners to work together with the team, which has been implemented and proven to provide great benefits for partners. With this program's success model, it can be used as a raw model for implementing community service in other places. Where partner empowerment must be carried out in a real way with examples or forms of assistance. This can trigger communities to start meeting their own needs through cooperation.

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