Implementation And Training On The Use Of The Integrated Village Data Management Information System In The Indonesia – Timor Leste Border Area

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Abstract.

Villages in the Indonesia–Timor Leste border area continue to operate their administrative tasks manually, relying on ledger books and Microsoft Word and Excel to manage data. However, with the rapid advancement of technology, these practices have led to less effective public services. To address this issue, a community service initiative was undertaken to implement the Integrated Village Data Management Information System in Weoe Village, aiming to streamline and enhance service delivery to the community. The system is web-based, which improves accessibility for both residents and village officials, allowing them to access data from anywhere with an internet connection. The initiative consisted of three main stages: preparation, implementation, and evaluation. The implementation of this system was successfully completed. System development and training on the use of the integrated village data management information system significantly improved participants' understanding, as evidenced by the comparison of pre-test and post-test scores. Participants' average scores increased by 34.5 points, from 49 in the pre-test to 83.5 in the post-test among five participants. This web-based village data management information system has proven to be an effective solution for enhancing public services, making them more efficient and impactful.

Keywords: *Village Information System; Indonesia – Timor Leste border; integrated village system and Weoe village.*

I. INTRODUCTION

Weoe Village is located in the Wewiku Subdistrict, Malaka Regency, East Nusa Tenggara Province. It has a population of 5,416 residents, organized into 8 hamlets, 17 community groups (RW), and 35 neighborhood associations (RT) [1]. The village is home to 1,408 family heads and is one of Indonesia's border villages adjacent to Timor Leste. Thanks to the presence of a mobile phone tower, Weoe Village has adequate signal coverage, which can be leveraged to enhance public services through the implementation of an integrated village data management information system.The implementing team, in collaboration with the Head of Weoe Village, has agreed to prioritize a program aimed at improving the quality of public services. The proposed program not only focuses on data management but also addresses other critical territorial issues, such as local economic potential, education, agriculture, and livestock. This provides a solid foundation for future initiatives that will tackle broader regional challenges.Currently, Weoe Village does not have an integrated system for managing essential village data, such as permits, assets, membership records, potential local products, and the village website

These data are still managed manually using Microsoft Word and ExcMoreover, information dissemination related to development and community empowerment remains limited, relying primarily on the WhatsApp platform.The issue of suboptimal public services can be addressed by implementing an integrated village information system. [2] successfully developed a web-based integrated database system for providing village website information services. [3] successfully developed an integrated village administration information system in Karoya Village, Purwakarta Regency, to ensure smooth and efficient

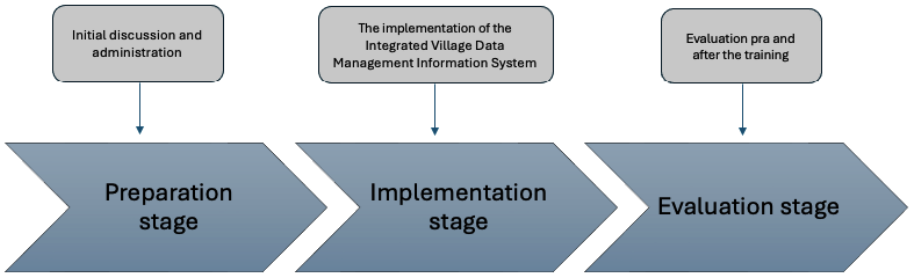
administration for the community. [4] successfully developed a population data processing information system in Purwosari Village. [5] successfully developed a web-based integrated village information system in Sidakangen Village. Previous community service projects demonstrate that the utilization of village information systems can improve public services [6–10]. The implementation of this integrated system aims to simplify and enhance the delivery of services to the community, ensure transparency in village programs, accelerate public service processes, and serve as a tool for monitoring the performance of the village government.

II. METHODS

This community service activity is carried out in three stages:

1. Preparation Stage
   During this stage, the implementation team engages in discussions with the Head of Weoe Village to identify the existing issues within the village. In addition, administrative procedures are completed to formalize the cooperation between Weoe Village and the team.
2. Implementation Stage
   This stage begins with the analysis and design of system requirements, followed by the actual development of the system. Once the system is developed, training sessions are conducted for administrators appointed by the village head, ensuring they are equipped to manage the Integrated Village Data Management Information System effectively.
3. Evaluation Stage
   The evaluation stage involves assessing the conditions before and after the training and system implementation. The team will conduct interviews and gather feedback to evaluate the effectiveness of the community service activities that have been carried out.

Fig 1. Shows the community service stages.



III. RESULT AND DISCUSSION

Development of the Application

Before conducting training on the use of the integrated village data management information system, the team first developed the integrated village data management information system, which is web-based. Several pages of the developed application can be seen in Figures 2-4. The login feature is used to access the application's dashboard. On the dashboard page, there are features for managing user data, residents, asset ownership, membership, potential yields, website content, and population-related documents.

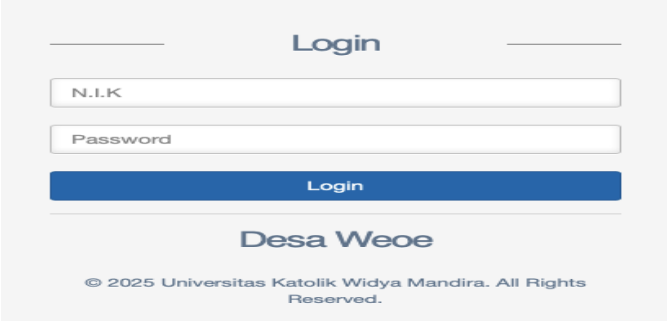


Fig 2. Login page

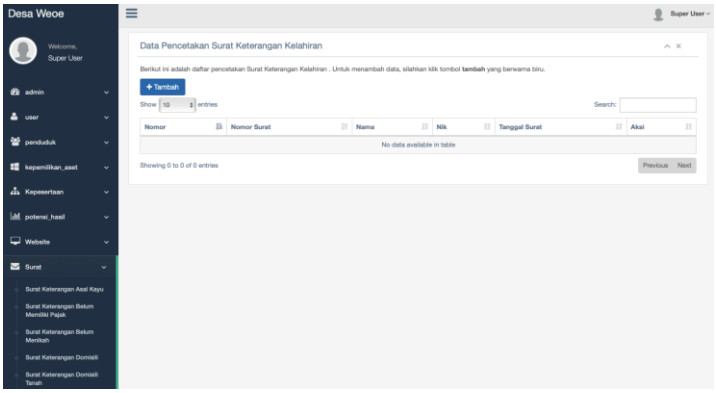


Fig 3. Dashboard page for admin

Training on the Use of the Application

Implementation of the training

The training activity was conducted on May 20, 2025 at Weoe Village office. The training focused on the use of the integrated village data management information system by the village head, village secretary, and two staff members of Weoe Village. The training activity lasted for two hours. Figures 5 and 6 show photos of the training activities, and Figure 7 is a group photo taken after the training session was completed.

Fig 4. Training on the use of the integrated village data management information system 1

Fig 5. Training on the use of the integrated village data management information system 2

Fig 7. A group photo after the training session

Evaluation of Activities and Assistance

Before the training activities were conducted, the team distributed a link containing a pre-test questionnaire to the four training participants. The four participants were instructed to fill out the link honestly. The link to the post-test questionnaire was also shared after the training activities. Table 1 shows a comparison of the pre-test and post-test scores.

Tabel 1. Comparison of pre-test and post-test results

No	Participant	Pre-Test score	Post-Test score
1.	Participant 01	51	85
2.	Participant 02	48	80
3.	Participant 03	47	82
4.	Participant 04	50	87
	Average	**49**	**83.5**

A comparison of pre-test and post-test results shows a significant increase in knowledge regarding the use of the integrated village data management information system in supporting more effective and efficient community services in Weoe Village. The pre-test and post-test results demonstrate an average knowledge increase of 34.5 points, from an average pre-test score of 49 among five participants to an average post-test score of 83.5. The highest improvement was achieved by the fourth participant, whose score increased from 50 in the pre-test to 87 in the post-test. To ensure the continued use of the application, ongoing assistance is provided via the WhatsApp platform. Through this application, training participants can report challenges they face during self-learning, and the implementation team responds by providing solutions either through text messages or phone calls.

IV. CONCLUSION

The implementation of the training and application of the integrated village data management information system to support administration tasks in Weoe Village, Malaka Regency, East Nusa Tenggara, has been successfully carried out. The results of the activity show an increase in understanding among the training participants, which included the village head and village officials. This improvement is reflected in the post-test results, which show significantly higher scores. This web-based information system has proven to support integrated village data management, making community services more effective and efficient.

V. ACKNOWLEDGMENTS

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