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Creating a Digital Information Map in Hanura Village, Pesawaran Regency

Nur Afwan[1], Viona Rosmiati[2], Fegy Herlinawati[3], Ages Mahesa[4], Aura Husnaini Putri Zaidani[4], Zahira Sandra Baysella[5]*, Yosef Widiarso[6]

[1] Geodetic Engineering Study Program, Faculty of Engineering, University of Lampung, Indonesia
[2] Physics Study Program, Faculty of Mathematics and Natural Sciences, University of Lampung, Indonesia
[3] Mathematics Study Program, Faculty of Mathematics and Natural Sciences, University of Lampung, Indonesia
[4] Computer Science Study Program, Faculty of Mathematics and Natural Sciences, University of Lampung, Indonesia
[5] English Education Study Program, Faculty of Teacher Training and Education, University of Lampung, Indonesia
[6] Medical Education Study Program, Faculty of Medicine, University of Lampung, Indonesia

*Correspondence E-mail: zahirasandrabaysella18@gmail.com

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ABSTRACT

This community service activity focuses on the creation of a digital information map in Hanura Village, which aims to improve the management of infrastructure, agriculture, natural resources, and spatial planning. It also helps in disaster management, economic development, and better public services. This map not only increases government transparency but can also be used as a basis for the development of innovative applications. Thus, the creation of a digital information map is an important tool in the planning and management of the Hanura Village area and improves the quality of life of the local community. The creation of this information map is an important step in spatial data management in Hanura Village because it helps in resource management, disaster risk mitigation, economic development, increases government transparency, and supports better decision-making related to regional planning. The method used involved field surveys and digital mapping technology in Hanura Village, on July 1-20, 2023. The results of this community service activity show the implementation of an information map that successfully integrates diverse data, such as infrastructure, agricultural land, public assets, as well as geographic and demographic characteristics. The discussion includes the significance of information maps in supporting sustainable regional planning and community participation in the decision-making process. The importance of information maps as an effective tool in embracing data diversity to help create a better understanding of village dynamics and support better informed decision-making.

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1. Introduction

Geographic data management has become essential in the rapidly evolving era of information and technology. According to Pasaribu *et al.* (2019), a database system called GIS has special capabilities for handling spatially referenced data and performing a number of work operations. Hanura Village, located in Teluk Pandan District, Pesawaran Regency, is experiencing significant changes in terms of population growth, infrastructure, and land use. In this context, the use of modern mapping technology to produce information maps has become increasingly important. A deeper understanding of the steps in the information map creation process can provide valuable insights into effective spatial data management. According to Lail & Kusuma (2015), a digital information map is a representation of geographic phenomena stored for display and analysis by a digital computer. In addition, the use of this information map has a primary function, namely producing an accurate map of the area itself (Masrianto et al., 2020; Ryandi *et al.,* 2022, Ramadhani *et al.,* 2021).

Article 86 of Law Number 6 of 2014 concerning villages states that village governments must have a village information system covering village data and village development (Setiyowati et al., 2021). Information maps, especially in digital form, have crucial benefits. First, they facilitate efficient navigation and regional planning, helping communities and governments better achieve their goals. Second, in disaster mitigation and natural resource management, digital maps play a crucial role in risk identification and taking appropriate actions. Third, maps support economic development by identifying business opportunities and tourism potential. Factors influencing the importance of digital maps in Hanura Village include better natural resource management, disaster risk mitigation, local economic development, sustainable spatial planning, improved public services, and better data-driven decision-making. With digital maps, Hanura Village can optimize regional management and improve the quality of life of its residents. Therefore, this study aims to explain how information maps can be created in Hanura Village. By understanding the steps involved in combining data from various sources, such as infrastructure, demographic characteristics, and public assets, we can understand the contribution of information maps to informed and contextual decision-making. Thus, this research has relevance in the context of sustainable regional planning and better decision-making. Furthermore, digital maps offer

advantages such as consistent quality, without any degradation, ease of storage and transfer from one storage medium to another, and ease of updating through specific software.

This community service activity aims to explain and demonstrate the process of creating digital information maps in Hanura Village using Geographic Information System (GIS) technology. Specifically, it seeks to enhance understanding of spatial data management by integrating various data sources, including infrastructure, demographic characteristics, land use, and public assets, into a comprehensive digital mapping system. In addition, this activity aims to support village governments in implementing the Village Information System as mandated by Law Number 6 of 2014 by strengthening local capacity in the use of modern mapping technologies for sustainable regional planning and informed decision-making.

2. Methods

This Community Service activity was held in Hanura Village, Teluk Pandan District, Pesawaran Regency. It was initiated by a team of students from the University of Lampung's Community Service Program (KKN) and implemented in collaboration with Hanura Village Government officials. The activity ran from July 1 to July 20, 2023.

The first stage in the program to create an information map or public facilities in Hanura Village was data collection. To conduct data collection, a survey was conducted to identify key points that would serve as references for determining village boundaries. Hanura Village already has coordinate points and village boundary data available on the official Hanura Village website.

After data collection, the next stage was data processing. The collected data was processed using QGIS software and applications. According to Husnan and Herlambang (2019), the Quantum GIS application is an open-source, cross-platform desktop geographic information system application that provides data display, editing, and analysis. During this data processing, a digital map will be created showing the boundaries of Hanura Village, along with information points and public facilities within the village.

The next stage is field validation. The team will return to the field to ensure that the map reflects actual conditions. If discrepancies are found between the digital map and the field conditions, corrections will be made based on valid data. After the validation process, the completed map of public facilities in Hanura Village will be submitted to the Hanura Village office for inclusion on the website.

3. Results and Discussion

Hanura Village is a smart village where the majority of residents and village officials already use technology. Hanura Village already has an official website and logo (Figure 1). The website even includes a map of the village boundaries and other public facilities. This map was created to add sections not yet included in the existing map on the Hanura Village website. Facilities on the map include mosques, churches, restaurants, cemeteries, village offices, community health centers, and large retail outlets. The public facility map program also provides information for both Hanura Village residents and those outside Hanura Village regarding the location of commonly needed facilities within the Hanura Village area. The process, from data collection and processing to field validation, is a well-integrated phase of the program. The alignment between the digital map and field conditions demonstrates the program's effectiveness in fostering a shared understanding of village boundaries (Nugraha, 2012).

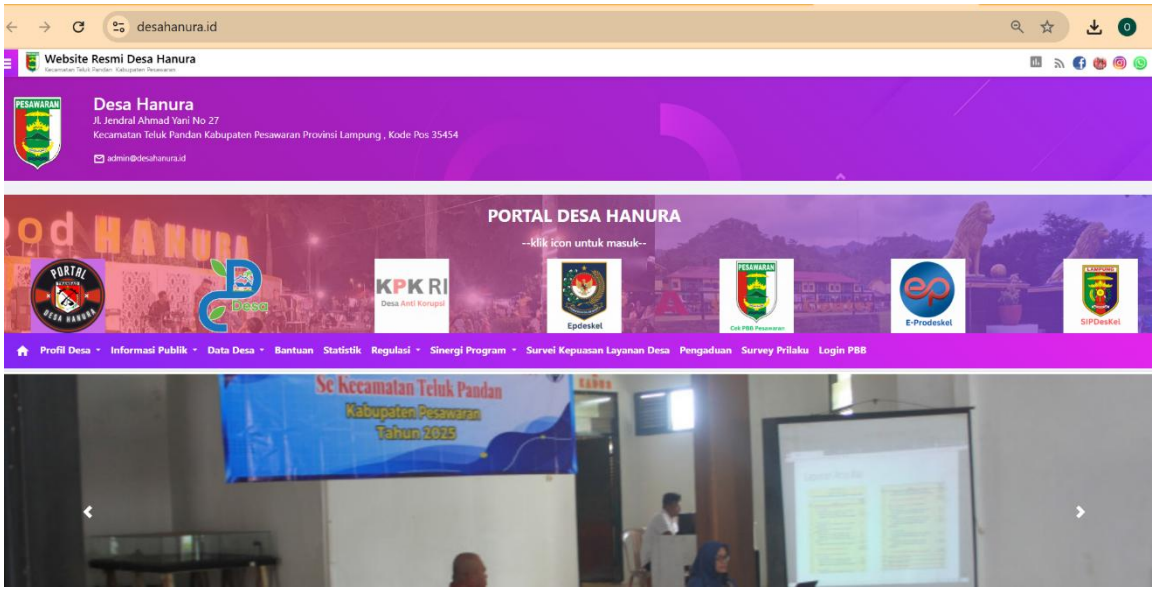

Figure 1. Homepage of Hanura Village Website.

Although, this study has limitations that need to be considered, such as limited data availability, mapping technology resources, and other factors that influence the depth and scope of the activities results, which require evaluation, by considering the dynamics of geographic data management in the context of Hanura Village, this study can provide a better understanding of how information maps can be a valuable tool in supporting more effective planning and decision-making at the village level.

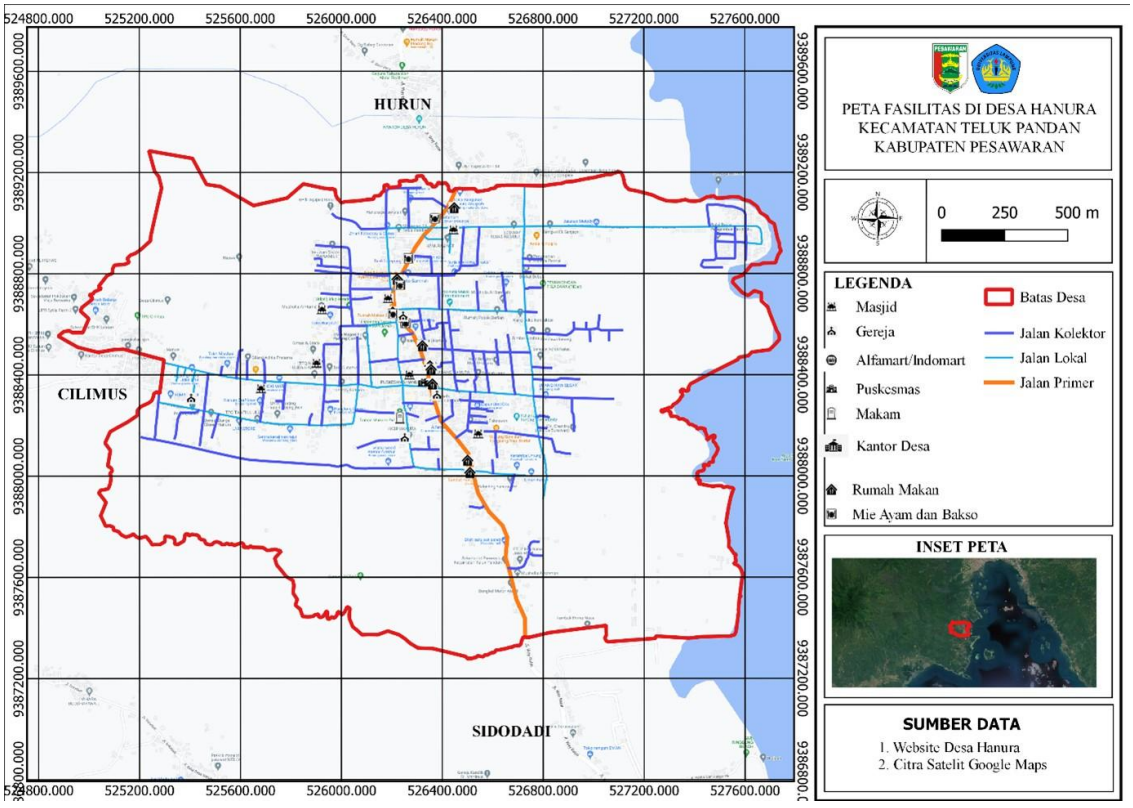

Figure 2. Results of the Hanura Village Facilities Map

The digital information map (Figure 2) developed for Hanura Village has significant benefits for the village's development and sustainability. First, it provides a solid foundation for better development planning. With readily available data, the village government can identify areas requiring infrastructure investment, such as roads or educational facilities. Furthermore, the map enables more efficient management of natural resources, such as agricultural land and forests, which can improve agricultural yields and environmental conservation.

Beyond its benefits in planning and management, the digital information map also plays a crucial role in crisis management. It enables the village to respond quickly to emergencies, such as natural disasters or pandemics. Furthermore, the map can be an effective tool in identifying economic opportunities in the village, such as tourism development or local businesses, which can increase income and create jobs. Furthermore, the digital information map also strengthens transparency and community participation. With easily accessible information, the community can better monitor village government activities and participate in local decision-making. Finally, disseminating the map to the community can be done through various means, such as community meetings, social media, the village website, training, and collaboration with local schools. Overall, the digital information map is an invaluable tool to help Hanura Village manage resources, plan development, respond to crises, and improve the overall quality of life for the community.

4. Conclusions

Based on the discussion above and the results of the maps published on the Hanura Village website, it can be concluded that the Community Service Program (KKN Period II) of the University of Lampung in developing public facility maps in Hanura Village, Teluk Pandan District, Pesawaran Regency, was successfully implemented. The program demonstrated strong participation from both village authorities and the local community in data collection and map development, resulting in informative village boundary and public facility maps that provide both short- and long-term benefits for village development and economic activities. Furthermore, the success of this program may serve as a model for other villages in implementing accurate and beneficial digital public facility mapping. Program effectiveness can be evaluated through community adoption and use of the maps, active public participation in mapping processes, and improvements in village development planning supported by map-based information.

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