

Preparation of Administrative Boundary Map of Arahon Kidul Village, Arahon District, Indramayu Regency, West Java

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GIS, Administrative Boundaries, Map Making

ABSTRACT

This research aims to create a map of village administrative boundaries in the Arahon Kidul area using GIS software. By combining data from various sources and utilizing the analysis features provided by GIS, this research aims to complete incomplete village data and produce administrative boundary maps that are accurate and informative. It is hoped that the results of this research can contribute to regional management, development planning and preventing conflicts related to village boundaries.

INTRODUCTION

Mapping village administrative boundaries has an important role in regional management, development planning and conflict management (Baharuddin, Refki, & Fuady, 2020). In the Arahon Kidul area, there are challenges in data completeness and accuracy of village administrative boundary maps. This lack of data can hinder effective planning efforts and reduce transparency in regional governance (Mahasin, 2021). Therefore, the use of GIS (*Geographic Information System*) software emerged as a potential solution to overcome this problem (Masnur, Alam, & Muhammad, 2022).

Utilizing GIS *software* in creating village administrative boundary maps provides many benefits (Luis, Dharmawan, & Priyono, 2021). First, GIS allows combining data from various sources, including spatial data and attributes related to village administration (Heldayani, Saputra, & Mala, 2018). This allows incomplete or inaccurate data to be corrected. Second, GIS also allows interactive visualization of data in the form of digital maps, which can facilitate understanding and analysis of village administrative boundaries (Supuwingsih & Muhammad Rusli, 2020). Lastly, GIS *software* can produce maps with a high level of accuracy, which is very important to avoid potential conflicts or different interpretations regarding territorial boundaries (Yusuf, 2017).

Through the use of GIS *software*, it is hoped that the creation of village administrative boundary maps in the Arahon Kidul area can be done more efficiently and accurately. By completing incomplete village data and utilizing the analysis features provided by GIS, the resulting mapping results can provide accurate and useful information for better regional planning and management.

METHOD

The research method for making a map of the administrative boundaries of Arahan Kidul Village involves several important stages to achieve the goal of making an accurate and informative map. The following are the stages in this research method:

1. Village Boundary Information Data Collection

Village boundary information data was collected through interaction with village officials and field observations. This information includes verbal descriptions, existing sketch maps, as well as information from community leaders who have knowledge of village boundaries.

2. Creating Administrative Boundary Vector Data

At this stage, the village administrative boundary data that has been collected is used to create vector data in digital format. This process is carried out through digitization using QGIS software. Google Earth maps are used as a basis for easy identification and digitization of administrative boundaries.

3. Digitization of Public Facilities, Roads and Rivers

Apart from administrative boundaries, this stage involves digitizing public facilities, roads and rivers in the village area. This aims to complete the spatial information needed to create a more comprehensive map.

4. Preparing Vector Data Layers and Managing Symbology

After the vector data is collected, the next step is to arrange the data layers. This involves grouping data by type (e.g., village boundaries, public facilities, roads, rivers) and arranging appropriate symbology to differentiate each type of data on the map.

5. Create a Map Layout

At this stage, the map that has been constructed in the software will be arranged in layout form which is ready to be printed or presented. Layout settings include the placement of the title, legend, scale, and other elements needed in the final map.

6. Advanced Processing and Validation

After the map is planned, the further processing stage includes revalidation of existing data and information. This process aims to ensure the accuracy and consistency of the map before it is produced in final form.

7. Dissemination of Results

The finished village administrative boundary map can be disseminated to the village government, community and other related parties. This aims to provide benefits to various parties who need information regarding administrative boundaries and characteristics of village areas.

By following these steps, the creation of a map of the administrative boundaries of Arahan Kidul Village can be done in a more structured and effective manner. This method enables data integrity and map accuracy required for planning and decision making purposes.

RESULTS AND DISCUSSION

In this research, a map of village administrative boundaries in the Arahan Kidul area was created using GIS (*Geographic Information System*) *software* . Spatial data and village administrative attributes obtained from various sources are combined to produce vector digital data that represents village administrative boundaries. From this data, accurate and informative village administrative boundary maps can be produced. In addition, printed maps of village administrative boundaries are also produced for the purpose of physical presentation to the public. The following is a map of the administrative boundaries of Arahan Kidul Village.

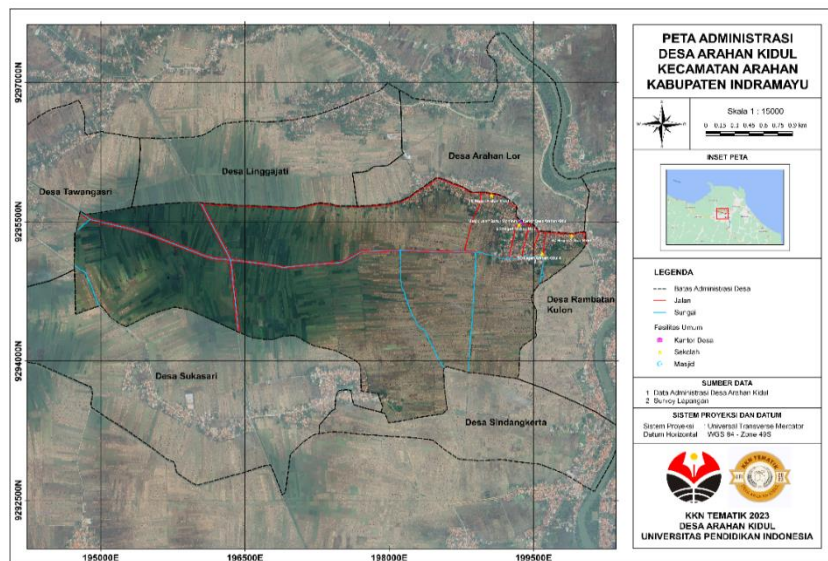


Figure 1. Administrative map of Arahan Kidul Village



Figure 2. Submission of printed maps to village officials

Making village administrative boundary maps using GIS *software* is a strategic step in meeting the need for accurate and easily accessible data. The use of GIS *software* allows combining various types of data related to village administration, such as spatial data and attribute information, into a single unit that can be processed and visualized. This supports the correction of incomplete or inaccurate data, so that the final map results can reflect real conditions in the field.

The resulting digital vector data for village administrative boundaries has advantages in terms of flexibility and ease of processing. This data can be used in various GIS *software* and other mapping programs, facilitating detailed analysis and further development in the context of regional planning. Apart from that, printed maps of village administrative boundaries have an important role in communicating with the community. Printed maps provide a more realistic and

easy to understand visual representation, which can help people clearly understand village boundaries.

In the context of the Arahan Kidul area, accurate village administrative boundary maps have a positive impact in various aspects. Regional management can be carried out more effectively and on target, development planning can be better prepared, and the potential for conflict caused by different interpretations of administrative boundaries can be minimized. Apart from that, the community can also have a better understanding of their village's administrative area, resulting in participation in decision making region-related decisions can be improved.

CONCLUSION

In this research, a map of village administrative boundaries in the Arahan Kidul area has been successfully created using GIS *software* . By combining spatial data and village administrative attributes, digital administrative boundary vector data was successfully produced. Printed maps of village administrative boundaries are also produced for visual communication purposes to the community. The use of GIS technology in making this map has had a positive impact on regional management, development planning, and community understanding of village boundaries.

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