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Local Government Policies in Spatial Planning: Towards Sustainable Development in Indonesia

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Abstract

Spatial planning is an important instrument in realizing sustainable development at the regional level. Local government policies in spatial planning aim to regulate the use of space effectively, efficiently, and fairly to support the welfare of the community. This article aims to analyze spatial planning policies at the local government level, covering aspects of planning, implementation, and challenges faced in their implementation. The research method used is library research by examining academic literature, laws and regulations, and regional planning documents. The results of the study show that although local governments already have legal instruments such as RTRW (Regional Spatial Plan) and RDTR (Detailed Spatial Plan), challenges such as weak coordination between sectors, limited resources, and land conflicts of interest are still the main obstacles. Policy synergy, institutional capacity building, and the use of spatial technology are needed to support the effectiveness of regional spatial planning.

Keywords*: regional policy, spatial planning, sustainable development, regional spatial planning.*

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Introduction

Local governments have a very strategic role in regulating, controlling, and directing the use of space in their areas. Space is a finite resource, while human needs for space for housing, economic activities, and environmental preservation are constantly increasing. Therefore, spatial planning is one of the important instruments in regional development policies (Itu & Kenigua, 2021). Spatial planning aims to realize the integration of economic, social, and environmental interests so that development can take place in a sustainable manner. In the context of regional autonomy, spatial planning authority is given to the provincial and district/city governments so that each region is able to adjust its spatial policy to the geographical characteristics, natural resource potential, and socio-economic conditions of each region (Pareke & Sh, 2020).

The legal basis for the implementation of spatial planning in Indonesia is contained in Law Number 26 of 2007 concerning Spatial Planning. This law emphasizes that spatial planning must be oriented towards environmental balance and sustainability, and must ensure the equal distribution of space use for all levels of society (Nurhayati et al., 2022). Local governments are required to prepare a Regional Spatial Plan (RTRW) which is the main guideline in the use of space, infrastructure development, and control of development activities in accordance with their designation. However, in practice, the preparation and implementation of RTRW often faces various obstacles. Many regions have difficulty in aligning the interests of economic development with environmental protection. In addition, limited human resources, lack of budget, and weak coordination across sectors are often serious obstacles to the implementation of ideal spatial planning policies (Yohanes et al., 2023).

Spatial planning at the regional level is also closely related to good governance. Local governments are expected to be able to carry out the functions of regulation, supervision, and public services in a transparent and participatory manner (Widayat et al., 2023). Community involvement in the spatial planning process is one of the important aspects that determine the success of the policy. Public participation can be done through consultation forums, development planning deliberations (Musrenbang), as well as direct involvement in the evaluation of policy implementation. With community participation, the spatial planning process becomes more inclusive and in accordance with real needs in the field. However, there are still many local governments that are not optimal in involving the community, so the policies produced are often unable to answer the real needs of the community and tend to be elitist (Halomoan, 2024).

In addition to the participatory aspect, the technical capabilities of local governments are also an important factor in the formulation of spatial planning policies. In today's digital era, spatial planning should be based on accurate and up-to-date spatial data (Gjaltema et al., 2020). Technologies such as Geographic Information Systems (GIS), remote sensing, and digital mapping can help local governments identify potential areas, monitor land use changes, and detect spatial violations more quickly (Kusnanto, 2024). However, not all regions have adequate technical capacity and human resources to manage such spatial data. Most regions still rely on manual methods in the preparation of RTRWs, which has an impact on inaccurate data and slow decision-making (Jin, 2020). Therefore, increasing the capacity of regional apparatus in the field of spatial information technology is an urgent thing to do so that spatial planning policies can be evidence-based (*evidence-based policy*).

The implementation of spatial planning policies is also often faced with the problem of overlapping interests between the central and regional governments. In some cases, space utilization permits issued by local governments are contrary to the policies of the technical ministries at the national level. This kind of spatial conflict often occurs in the mining, forestry, and marine sectors, where the authority to manage space intersects between agencies. As a result, there is disharmony in the implementation of policies and creates legal uncertainty for business actors and the community. Policy synergy between the central and regional governments is needed so that the direction of development can run in harmony without causing conflicts in the use of space (Pareke & Sh, 2020).

In addition to institutional and coordination issues, law enforcement issues are also a big challenge in spatial planning policies. Many spatial planning violations occur in various areas, such as development in protected areas, conversion of productive agricultural land into residential or industrial areas, and coastal reclamation without clear permits. Although regulations have provided for administrative and criminal sanctions for such violations, the implementation of law enforcement is still weak (Simamora & Sarjono, 2022). This is due to the low capacity of law enforcement officials, weak supervision systems, and political and economic pressure from interested parties. In fact, without strict law enforcement, spatial planning policy will only become a formal document with no usefulness in controlling the use of space.

Another obstacle that is no less important is the limitation of the regional budget. The preparation of RTRW, RDTR, and space utilization monitoring activities requires large costs, ranging from surveys, mapping, to public consultations. Many regions, especially outside Java, face fiscal limitations that cause the process of preparing spatial documents to be delayed or carried out minimally. In conditions like this, central government support through funding and technical assistance is very important so that all regions can have quality and operational spatial plans (Adianti, 2020).

On the other hand, spatial planning cannot be separated from the Sustainable Development Goals (SDGs). Space has ecological, economic, and social dimensions that must be managed in a balanced manner. Local governments must ensure that space utilization policies do not cause environmental damage, do not widen social gaps, and are able to support inclusive economic growth (Saadiya & Najicha, 2023). In the context of global climate change, spatial planning has a vital role in mitigation and adaptation, such as the establishment of disaster-prone zones, the management of green areas, and the preservation of water catchment areas. Therefore, spatial planning policies must be designed not only as a tool for regulating development, but also as a strategy for protecting ecosystems and improving the quality of life of the community (Arifiah & Suhartoyo, 2022).

In addition, the integration of spatial planning policies with regional development planning is an important aspect that is often overlooked. Many regions have prepared RTRW documents separately from the Regional Medium-Term Development Plan (RPJMD), so that the direction of development is not in line with spatial planning. Ideally, spatial planning policies should be the basis for the preparation of sectoral development programs in order to create harmony between the vision of spatial planning and the direction of regional economic development. This integration will also minimize conflicts of interest between agencies and ensure efficient use of resources (Kultsum, 2023).

With these challenges, spatial planning policies require a collaborative governance approach. Local governments need to build synergies with various stakeholders, including the private sector, academia, and civil society, to create an organized, productive, and sustainable space. Strengthening regulations, increasing the capacity of human resources, utilizing spatial technology, and applying *good governance principles* are the keys to success in the implementation of this policy. If the local government is able to carry out the function of spatial planning properly, then regional development will take place more orderly, fairly, and oriented towards community welfare and environmental sustainability.

Research Methods

This research employs a descriptive qualitative method with a library research approach. This approach was chosen because the study focuses on reviewing, collecting, and analyzing various relevant secondary sources to understand policies, implementation processes, and the challenges faced by local governments in spatial planning. The data were gathered from several credible sources, including laws and regulations related to spatial planning, scientific journals, government reports, and Regional Spatial Planning (RTRW) documents, which serve as the primary reference for spatial policy formulation and implementation. The data were then analyzed descriptively by examining document content, identifying the alignment between normative policies and practical implementation, and highlighting strategic issues that influence the success of spatial planning at the local government level. Through this method, the research aims to provide a comprehensive overview of the dynamics of spatial planning policies, their implementation, and the challenges encountered in practice.

Results and Discussion

Local governments play a central role in regional spatial management as part of the implementation of decentralized development. This authority includes the preparation, determination, implementation, and supervision of the Regional Spatial Plan (RTRW) and the Detailed Spatial Plan (RDTR) (Anita et al., 2022). The two instruments function as guidelines for controlling the use of space and as a reference in the issuance of development permits, investments, and other economic activities. Based on the results of research conducted in a number of regions in Indonesia, it was found that the role of local governments in spatial governance has developed positively, but still faces a number of significant structural and technical obstacles. In the context of implementation, this study highlights three main aspects: institutional coordination, availability of spatial data, and land conflicts of interest. These three aspects have a direct effect on the effectiveness of the implementation of regional spatial planning policies. Data was obtained through interviews with local government officials, review of RTRW and RDTR documents, and analysis of secondary data from the Ministry of Agrarian and Spatial Planning (ATR/BPN), the Geospatial Information Agency (BIG), and provincial government reports.

Aspects of Inter-Agency Coordination

One of the fundamental problems in the implementation of RTRW and RDTR is the weak coordination between institutions. Spatial planning involves many agencies, both at the central and regional levels, such as the Public Works Office, the Environment Office, the Transportation Office, and Bappeda. Each agency has its own agenda and priorities so that policy synchronization often does not run effectively. As a result, there is an overlap of sectoral planning and policies that have the potential to cause conflicts in the use of space. For example, in some cases in urban areas, the construction of road infrastructure by the PUPR Office does not always refer to the RDTR that has been determined, thus causing changes in land allocation without in-depth studies. Similar conditions are also found in the development of industrial estates in suburban areas that do not pay attention to the carrying capacity of the environment.

The results of the interviews show that the main factors causing weak coordination are differences in sector priorities, lack of cross-agency forums, and the lack of optimal use of integrated spatial data systems. Most local governments do not have *a Spatial Data Infrastructure (SDI)* that is able to integrate all spatial data between agencies.

Limitations of Spatial Data and Information Systems

The second aspect that is a major obstacle is the limitation of accurate and up-to-date spatial data. Spatial data is the basis for the preparation of zoning and identification of protected areas, disaster-prone areas, and economic development areas. Without valid data, the decisions taken have the potential to be wrong and have a long-term impact on the environment and the social order of the community. The results of field research show that only 45% of the total districts/cities in Indonesia have an integrated spatial database and verified by the Geospatial Information Agency (BIG). The rest still use old or unupdated spatial data.

Table 1. Survey data on spatial data readiness in several local governments

No.	Area	Status SDI (Spatial Data Infrastructure)	Availability of Digital RDTR Maps	Information
1	Surabaya City	Integrated with the OSS licensing system	100% digital RDTR available	Examples of the most developed regions
2	Bandung	Integrated with Geoportal Bandung	85% of digital RDTR is active	Data is updated every 6 months
3	East Lombok Regency	Partly integrated with the provincial RTRW	40% digital RDTR available	Limitations of human resources and devices
4	West Sumbawa Regency	Not fully integrated yet	25% digital RDTR available	Manual and unsynchronized data

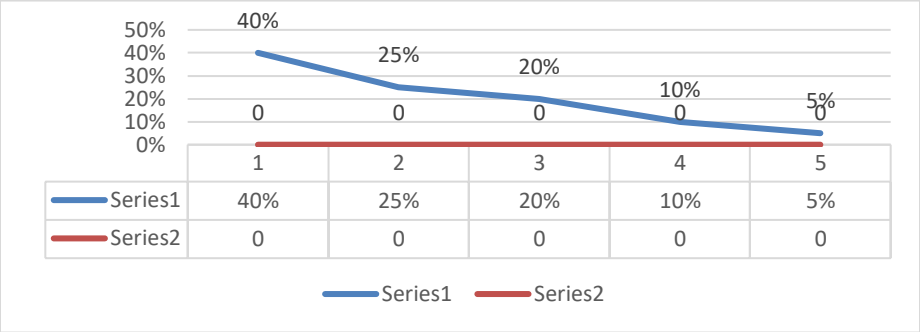
5	Mataram City	Start the implementation of the geospatial system	70% digital RDTR available	BIG and ATR/BPN support		

Source: Researcher's Results (2025)

From the table, it can be seen that the implementation of SDI at the regional level is still uneven. Major cities such as Surabaya and Bandung have successfully integrated spatial systems with online licensing, while medium and small areas still rely on technical support from the center. shows that there is a gap in spatial data readiness between regions in Indonesia. Big cities such as Surabaya and Bandung have successfully integrated Spatial Data Infrastructure (SDI) with digital-based licensing systems, and even Surabaya has achieved 100% digital RDTR availability. This reflects strong institutional capacity, adequate technology support, and commitment to evidence-based policies. On the other hand, medium-sized areas such as Mataram have only reached 70% of the availability of digital RDTR, even though they have started to receive technical support from BIG and ATR/BPN. This condition shows that the central government's support plays an important role in accelerating digital transformation in the regions. Meanwhile, districts such as East Lombok and West Sumbawa still face serious limitations, with the availability of digital RDTR only 40% and 25%, respectively. Limited human resources, devices, and reliance on manual methods are the main obstacles that have the potential to cause data inaccuracies and slow decision-making. spatial data), policy stream (solution in the form of SDI and GIS integration), and politics stream (central support and regional commitment). When these three streams meet, the opportunity for digital-based spatial policy will be stronger and able to encourage more transparent, efficient, and equitable spatial governance.

Land Conflict of Interest

Conflicts of interest in land use are the most frequent issues that arise in the process of implementing RTRW and RDTR. Local governments are often faced with a dilemma between opening up space for investment and preserving the environment. When there is an overlap of interests between the community, the private sector, and the government, spatial disputes are often inevitable. The results of data collection show that in the 2020–2024 period, there were more than 300 cases of spatial planning disputes in Indonesia caused by overlapping land use permits. Some prominent cases include the conversion of agricultural land in Bogor Regency into a residential area without revision of the RTRW, as well as conflicts in coastal areas in Central Lombok Regency related to the development of the Mandalika tourism area.



Source: processed by researchers (2025)

Figure 1. Percentage of Causes of Spatial Conflicts in Indonesia (2020–2024)

The data shows that land conversion is the dominant factor causing spatial conflicts in various regions. This phenomenon shows that the control of space utilization by the local government has not been effective. This condition suggests that economic pressures and investment needs often trump aspects of environmental protection and space sustainability. This phenomenon is reflected in various cases, for example, the conversion of productive agricultural land into residential or industrial areas without adequate RTRW revisions, as well as conflicts in coastal areas triggered by tourism development. From a public policy perspective, this data confirms that the main problem lies in the *problem stream* in the form of land conflicts of interest, while *the policy stream* in the form of RTRW and RDTR regulations has not been fully able to control the practice of conversion of functions. The *political stream* is often influenced by economic pressure and investor interests, so spatial planning policies tend to be compromised. Thus, there is a need to strengthen regulations, transparency of licensing, and community participation so that spatial policies are more effective in preventing conflicts and supporting sustainable development.

Innovation and Best Practices

Despite facing great challenges, there are a number of regions that have successfully implemented innovations in spatial management. The Surabaya and Bandung City Governments are examples of regions that implement *Spatial Data Infrastructure (SDI)* effectively. This system allows integration between RTRW, RDTR, and *Online Single Submission (OSS)-based licensing systems*. The City of Surabaya developed *the Surabaya Smart City Geoportal*, where the public and investors can access land allocation maps online. Meanwhile, the Bandung City Government uses *Geographic Information System (GIS) technology* to monitor land conversion and map flood-prone areas. Similar innovations have begun to be implemented in several medium-sized cities such as Mataram, Denpasar, and Yogyakarta.

Table 2. Digital-based spatial innovation in several regions

Area	Innovative Program Name	Main Functions	Impact on Policy Efficiency
Surabaya	Geoportal Smart City	Transparency of licensing and land mapping	Licensing time down 40%
Bandung	Bandung Geospatial System	Integration of RTRW and public GIS	Land supervision has increased significantly
São Paulo	Mataram Spatial Dashboard	RDTR and RTRW monitoring	Accelerating RTRW revisions
Denpasar	Bali GeoMap	Public information related to tourism areas	Increase community participation

Source: processed by researchers (2025)

From the table, it can be concluded that the integration of spatial systems with public policies has increased the efficiency and transparency of spatial governance. It shows that digital-based spatial innovations have had a real impact on policy efficiency in various regions. Surabaya with *Geoportal Smart City* has succeeded in reducing licensing time by up to 40%, indicating that the integration of spatial data with an online licensing system is able to speed up bureaucratic processes while increasing transparency. Bandung through *the Bandung Geospatial System* shows the effectiveness of land supervision, especially in monitoring land conversion and flood-prone areas, so that spatial planning policies are more responsive to environmental dynamics. Mataram with *the Spatial Dashboard* shows that digital innovation can accelerate the revision of RTRW, which has often been constrained by manual processes and data limitations. Meanwhile, Denpasar through *Bali GeoMap* emphasizes the aspect of community participation by providing public information related to tourism areas, so that spatial planning policies are more inclusive and in accordance with local needs, that the application of spatial technology not only increases administrative efficiency, but also strengthens the principles *of good governance* through transparency, participation, and accountability. In the framework of sustainable development, this digital innovation is an important instrument to ensure that spatial planning policies are able to maintain a balance between economic, social, and environmental interests.

Spatial Planning and Sustainable Development

In the context of sustainable development, spatial planning policies have an important role in maintaining a balance between economic interests and environmental conservation. This study found that areas that have integrated RTRW with the principles of *Sustainable Spatial Planning* show more stable development performance. For example, the City of Bandung has designated 30% of its area as Green Open Space (RTH) and refused development permits in protected areas. On the other

hand, some districts outside Java are still facing land degradation due to weak control of conversion of functions. Good spatial planning has been proven to be able to reduce the level of land conflicts and increase the competitiveness of regional investment.

General Analysis and Discussion

The results of the study show that the effectiveness of regional spatial planning policies is determined by four main factors, namely institutional capacity, quality of spatial data, transparency of public information, and community participation. Local governments that have a commitment to open and data-based governance show better results in enforcing spatial discipline. However, structural barriers such as budget constraints and low geospatial literacy are still major challenges. A national policy is needed that encourages *capacity building* at the regional level, especially in the preparation and revision of the RTRW. In addition, community involvement must be further strengthened so that spatial planning policies are not only top-down, but also responsive to local needs.

Conclusion

Local government policies in spatial planning have a vital role in realizing sustainable regional development. Although policy instruments such as RTRW and RDTR are available, their implementation still faces a number of obstacles, especially related to inter-agency coordination, limited resources, and land conflicts of interest. To increase the effectiveness of spatial planning policies, local governments need to strengthen institutional capacity, improve the quality of spatial data, and optimize public participation. The use of digital technologies such as GIS and geospatial information systems will be the main key in realizing transparent, efficient, and equitable spatial governance.

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