

# Reforming Digital Mapping Regulations for Preventing Spatial Planning Violations in Indonesia: A Lesson from Australia

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## Abstract

Digital maps of the detailed plans play a crucial role in enforcing spatial planning regulations, providing clarity on permissible areas and assisting authorities in ensuring adherence. Despite existing regulations, violations are common, notably in Bali's tourism sector. The Job Creation Law 2023 then mandates accessible digital map issuance for detailed plans, integrating them into online submission systems to enhance transparency. Nonetheless, challenges persist, with many plans awaiting conversion into maps, underscoring the ongoing need for procedural efficiency in Indonesia. In Australia, local governments oversee planning decisions, with state involvement in strategic planning, exemplified by Victoria's governance under the Planning and Environmental Act 1987. Planning schemes that contain digital maps, determine land use rules, often categorized into zones with various permit requirements. Victoria's adoption of the smart planning initiative aims to

improve accessibility and engagement through user-friendly digital platforms. By looking at Australia's practices, this paper finds that Indonesia should address regulatory, technical, and coordination challenges, alongside prioritizing public involvement and professional cooperation in order to enhance Indonesia's digital map issuance processes and promote more effective spatial planning governance.

**KEYWORDS** *Digital Mapping, Detailed Plan, Spatial Planning Violations, Indonesia, Australia*

## Introduction

Planning is often associated with the specialized action<sup>1</sup> undertaken by professionals, experts, and governmental entities to establish spaces<sup>2</sup> that prevent and extenuate the adverse impacts of political and economic influences.<sup>3</sup> The management of land utilization and preservation at various scales,<sup>4</sup> including within cities, provinces, or entire nations, can enhance the well-being of individuals, ensure livelihoods, promote sustainable economic growth, and preserve the environment.<sup>5</sup> For effective implementation, spatial planning necessitates a multidisciplinary team comprising professionals such as lawyers, engineers, architects, planners, and public policymakers. Even within a single subject, such as law, spatial planning encompasses several areas, including tourism, administrative, constitutional, civil and criminal law. The discipline is also linked to international legal regimes<sup>6</sup> such as trade and investment,

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<sup>1</sup> Van Heerden, Quintin, et al. "Accessibility, affordability, and equity in long-term spatial planning: Perspectives from a developing country." *Transport Policy* 120 (2022): 104-119.

<sup>2</sup> Gerber, Jean-David, and Gabriela Debrunner. "Planning with power. Implementing urban densification policies in Zurich, Switzerland." *Land Use Policy* 123 (2022): 106400.

<sup>3</sup> Meng, Meng, et al. "Spatial planning in the face of flood risk: Between inertia and transition." *Cities* 126 (2022): 103702.

<sup>4</sup> Schwartz-Belkin, Inbar, and Michelle E. Portman. "A review of geospatial technologies for improving Marine Spatial Planning: Challenges and opportunities." *Ocean & Coastal Management* 231 (2023): 106280.

<sup>5</sup> Dombi, Mihály. "Types of planning systems and effects on construction material volumes: An explanatory analysis in Europe." *Land Use Policy* 109 (2021): 105682.

<sup>6</sup> Taylor, Nigel. "Commentary: What is this thing called spatial planning? an analysis of the British government's view." *Town Planning Review* 81, no. 2 (2010): 193-208.

although as a regulatory area, spatial planning regulation mostly focuses on national rather than international spheres.<sup>7</sup>

Different countries use various terms to refer to spatial planning governance, influenced by cultural traditions, local politics, and legal system preferences. In Israel, it is referred to as the "*Planning and Building Law*,"<sup>8</sup> while Russia employs the term "*Urban Planning Law*."<sup>9</sup> Several African countries have a "*Town and Country Planning Law*,"<sup>10</sup> while China adopts<sup>11</sup> a "*City Master Plan*" approach.<sup>12</sup> Across Europe, including countries like the Netherlands, Slovenia, Poland, Italy,<sup>13</sup> and Finland<sup>14</sup> the term "*Spatial Planning Laws*" is

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<sup>7</sup> Qian, Zhu. "Master plan, plan adjustment and urban development reality under China's market transition: A case study of Nanjing." *Cities* 30 (2013): 77-88.

<sup>8</sup> Allmendinger, Phil, and Graham Houghton. "Spatial planning, devolution, and new planning spaces." *Environment and Planning C: Government and Policy* 28, no. 5 (2010): 803-818.

<sup>9</sup> Golubchikov, Oleg. "Urban planning in Russia: towards the market." *European Planning Studies* 12, no. 2 (2004): 229-247.

<sup>10</sup> Maru, Mulugeta, and Hailu Worku. "Unpacking principles of resilience mainstreamed in Ethiopia's local urban spatial planning documents: practices from Kombolcha, an urbanizing secondary city." *Heliyon* 8, no. 3 (2022).

<sup>11</sup> Qian, "Master plan, plan adjustment and urban development reality under China's market transition: A case study of Nanjing."

<sup>12</sup> Guan, ChengHe, et al. "Does local planning of fast-growing medium-sized towns lead to higher urban intensity or to sprawl? Cases from Zhejiang Province." *Cities* 130 (2022): 103869.

<sup>13</sup> Cattivelli, Valentina. "Planning peri-urban areas at regional level: The experience of Lombardy and Emilia-Romagna (Italy)." *Land Use Policy* 103 (2021): 105282.

<sup>14</sup> Mattila, Hanna, and Aleksi Heinilä. "Soft spaces, soft planning, soft law: Examining the institutionalisation of city-regional planning in Finland." *Land Use Policy* 119 (2022): 106156.

commonly used.<sup>15</sup> Indonesia, like the present text,<sup>16</sup> follows the European tradition<sup>17</sup> in using the term "*Spatial Planning Laws*."<sup>18</sup>

It is crucial to maintain equilibrium between industrial and commercial expansion and the preservation of existing resources, including natural resources, water, soil, and air. The implementation of spatial planning laws assumes paramount importance in ensuring the optimal utilization of limited spatial resources.<sup>19</sup> It is imperative to prioritize sustainable development by avoiding actions that would impede the ability<sup>20</sup> of existing and coming generations to retrieve, potentially incurring significant costs.<sup>21</sup> This importance is amplified for nations like Indonesia, which favors economic expansion as a factor in human development.<sup>22</sup> Consequently, spatial planning laws that

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<sup>15</sup> Nummi, Pilvi, Aija Staffans, and Otso Helenius. "Digitalizing planning culture: A change towards information model-based planning in Finland." *Journal of Urban Management* 12, no. 1 (2023): 44-56.

<sup>16</sup> Priyanta, Maret. "Pembaruan dan harmonisasi peraturan perundangundangan bidang lingkungan dan penataan ruang menuju pembangunan berkelanjutan." *Hasanuddin Law Review* 1, no. 3 (2015): 337-349.

<sup>17</sup> Imamulhadi, Imamulhadi. "Aspek Hukum Penataan Ruang: Perkembangan, Ruang Lingkup, Asas, dan Norma." *Bina Hukum Lingkungan* 6, no. 1 (2021): 119-144. *See also and compare with another relevant cases*, Nugroho, Wahyu, and Erwin Syahrudin. "Law Enforcement of Spatial Planning Violations to Support Investment Balance and Environmental Sustainability in the Special Capital Region of Jakarta." *Pandecta Research Law Journal* 19, no. 1 (2024): 1-25; Arimurti, Danang Johar, and Fatma Ulfatun Najicha. "Ponorogo Regency Green Open Space Analysis of Law Number 27 of 2007 concerning Spatial Planning." *Indonesian Journal of Environmental Law and Sustainable Development* 2, no. 2 (2023): 199-210.

<sup>18</sup> Feitosa, Fillipe Oliveira, Paulo Batista, and Joao Lourenço Marques. "How to assess spatial injustice: Distinguishing housing spatial inequalities through housing choice." *Cities* 140 (2023): 104422.

<sup>19</sup> Brackhahn, Bernhard, and Risto Kärkkäinen, eds. *Spatial planning as an instrument for promoting sustainable development in the Nordic countries: action programme for 2001-2004*. Ministry of Environment, Denmark, 2001.

<sup>20</sup> Morgan, Bronwen, and Karen Yeung. *An introduction to law and regulation: text and materials*. Cambridge University Press, 2007.

<sup>21</sup> Hengstermann, Andreas, and Vera Götze. "Planning-related land value changes for explaining instruments of compensation and value capture in Switzerland." *Land Use Policy* 132 (2023): 106826.

<sup>22</sup> Prasetyo, Fitri Nur Aini, and Abdul Kadir Jaelani. "The Changing of Environmental Approval Administrative Law Perspective." *Journal of Human Rights, Culture and Legal System* 2, no. 3 (2022): 191-208.

encourage sustainable development assume immense importance.<sup>23</sup> Furthermore, considering Indonesia's susceptibility to natural disasters as an island nation, spatial planning laws should guide the growth of residential, industrial and tourism sectors away from high-risk areas.<sup>24</sup>

Despite the fact that Indonesia has had spatial planning regulations from the time of the colonizers, the Spatial Planning Law enacted in 2007 (referred to as the 'SPL 2007') stands out as the most extensive legislation on spatial planning to date. This law grants national, regional, and local governments the authority to formulate and implement comprehensive spatial plans, encompassing general and detailed plans.<sup>25</sup> In 2023, the Government of Indonesia issued Law Number 6 of 2023 on Job Creation (referred to as the 'JCL 2023'), which has the primary objective, among other things, to underscore the significance of digital mapping.<sup>26</sup> Article 14 (1) states that every project location must align with the existing detailed plan. Notably, Article 14 (2) is particularly intriguing as it mandates district governments to publish detailed plans in a digital map format based on established standards.

Although the existence of the SPL 2007 and the JCL 2023, there remains a widespread violation of spatial planning laws. An example can be seen in Bali, where the expansion of tourism accommodations disregards the existing spatial planning laws, both in provincial and district levels.<sup>27</sup> For example, 353 guesthouses in Klungkung District, the most of which are located on the Nusa Penida islands, have been operating with at least 70 percent of the required permits lacking.<sup>28</sup> Some have been built along the cliffs and on the shore. Similarly, the Impiana Kedewatan Hotel's river border structure violates the

<sup>23</sup> Stead, Dominic. "Conceptualizing the policy tools of spatial planning." *Journal of Planning Literature* 36, no. 3 (2021): 297-311; Sheppard, Adam, et al. *Essential Guide to Planning Law*. Policy Press, 2016.

<sup>24</sup> Kuller, Martijn, et al. "Planning support systems for strategic implementation of nature-based solutions in the global south: Current role and future potential in Indonesia." *Cities* 126 (2022): 103693.

<sup>25</sup> Widiatedja, I. G. N. P., and I. Nyoman Suyatna. "Job creation law and foreign direct investment in tourism in Indonesia: Is it better than before." *Udayana Journal of Law and Culture* 6, no. 1 (2022): 62-82.

<sup>26</sup> Hadi, Sudharto P., Rizkiana S. Hamdani, and Ali Roziqin. "A sustainability review on the Indonesian job creation law." *Heliyon* 9, no. 2 (2023).

<sup>27</sup> Praganingrum, Tjokorda Istri. "Kajian Terhadap Mekanisme Perizinan Pemanfaatan Lahan Tebing Tukad Ayung Kedewatan, Ubud, Gianyar." *Kurva Teknik* 2, no. 1 (2013): 50-68.

<sup>28</sup> Artaya, Ari. "Kewenangan Pemerintah Kabupaten Badung dalam Pengendalian Perizinan Pembangunan Sarana Akomodasi Pariwisata." *Jurnal Magister Hukum Udayana (Udayana Master Law Journal)* 5, no. 3 (2016): 543-558.

Gianyar District Spatial Plan.<sup>29</sup> Spatial Planning Laws have also been inconsistently enforced, particularly in Bali's cliff and ravine border limits. As a result, the construction of hotels on the cliffs and rivers (which is apparently banned) proceeds, and violating hotels finally begin to operate.<sup>30</sup>

In Victoria, Australia, some laws and regulations require the use of digital mapping in spatial planning.<sup>31</sup> In particular, Victoria's land use planning and development are regulated under the Planning and Environment Act 1987 (PEA VIC 1987). It requires planning authorities to prepare and maintain planning schemes, which include provisions for digital mapping, spatial data, and mapping requirements.<sup>32</sup> Victoria's planning schemes are statutory documents that outline the planning policies and regulations for specific areas. These schemes have included provisions for using digital mapping in spatial planning, including requirements for spatial data, mapping standards, and integrating digital mapping technologies.

There are two questions in this research, namely (1) why digital mapping regulations are essential for preventing spatial planning violations in Indonesia; and (2) how to reform regulations on digital mapping for preventing spatial planning violations in Indonesia by looking at Australia's practices. This research holds substantial importance as the existence of digital mapping can serve as a catalyst for commercial enterprises to comply with planning laws. Without these precise maps, district government officials face challenges in evaluating whether proposed activities contravene spatial planning regulations.

To begin, this paper starts by explaining the existence theory and evidence of planning regulations, particularly related to the presence of burdensome procedure, over-regulation, conflicting policy goals and top-down nature of planning as reasons behind regulatory failure. It then explains why digital mapping regulations are important for preventing spatial planning violations from the perspective of governments, investors, and the public. The

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<sup>29</sup> Delik News, *Investor Impiana Hotel Melanggar, Langkahi BWS Bali Penida*, Delik News, Aug. 21, 2019, at 1, <https://www.deliknews.com/2019/08/21/investor-impiana-hotel-melanggar-langkahi-bws-bali-penida/>.

<sup>30</sup> Delik News

<sup>31</sup> Williams, Peter John, and Angelique Mary Williams. "Sustainability and planning law in Australia: achievements and challenges." *International Journal of Law in the Built Environment* 8, no. 3 (2016): 226-242.

<sup>32</sup> Thompson, Susan, and Paul Maginn. "Planning Australia: An overview of urban and regional planning," in *System Aspects of Health Planning: Proceedings of IIASA Conference*, Baden, Austria, August 20-22, 1974; Uddin, Khandakar Farid, and Awais Piracha. "Urban planning as a game of power: the case of New South Wales (NSW), Australia." *Habitat International* 133 (2023): 102751.

problematic nature of the issuance of the digital map of the detailed plan is the next concern, showing the current situation that impedes the effectiveness of digital maps in spatial planning governance. As a comparative study, this paper begins to look at Australia's practices in utilizing digital maps in its planning scheme in order to streamline the procedure of the issuance spatial planning permit and prevent any possible violations. Finally, some crucial factors need to be addressed in order to reform the current digital mapping regulations.

## The Importance of Digital Mapping Regulations and Spatial Planning

### A. The Theory & Evidence of Spatial Planning Regulations

This theoretical framework will be employed to identify and examine the effectiveness of digital mapping in preventing spatial planning violations. Gunther Teubner (1986) applies a term 'Over-Socialization' of Law as a part of 'the regulatory trilemma' where the law is 'captured' by politics or by the regulated subsystem, specifically, the law is '*politicised*', '*economised*', and '*pedagogised*'.<sup>33</sup> Furthermore, burdensome and bureaucratic requirements are a significant cause of regulatory failure. Specifically, Cotterrell (1995) identifies that the legal expectations of 'law-government' and the arena of social interaction it tries to control often creates regulation that is too 'absolutist and inflexible'.<sup>34</sup> The analysis by Baldwin, Cave, and Lodge (2012) focuses on the concept of "over-regulation" as a legal shortcoming, characterized by excessively stringent and prescriptive regulations that hinder research and innovation prospects. This kind of charge has commonly been made against 'best available technology' standards in environmental regulation.<sup>35</sup> In relation to digital mapping regulations, they represent a critical step toward addressing long-standing regulatory challenges in this field. Digital mapping can be seen as a mechanism to reduce the politicization, economization, and pedagogization of

<sup>33</sup> Teubner, G. "After Legal Instrumentalism? Strategic Models of Post-Regulatory Law." *International Journal of the Sociology of Law and International Journal of Criminology and Penology* London 12, no. 4 (1984): 375-400.

<sup>34</sup> Cotterrell, Roger. *Law's community: legal theory in sociological perspective*. Oxford University Press, 1995.

<sup>35</sup> Baldwin, Robert, Martin Cave, and Martin Lodge. *Understanding regulation: theory, strategy, and practice*. Oxford University Press, 2011.

legal frameworks by providing objective, data-driven tools for decision-making. By integrating technology into spatial planning, the risk of law being captured by political or economic interests can be mitigated. Equally, digital mapping offers a flexible and responsive alternative, enabling planners to visualize and adjust spatial plans in real-time based on accurate data.

The principle of transparency in governance and the theory of spatial justice are also critical to analyze the existence of digital mapping regulations. Transparency ensures that decision-making processes are open, accountable, and accessible to the public.<sup>36</sup> When applied to digital mapping, this principle can foster trust in regulatory frameworks by allowing stakeholders, including citizens, policymakers, and developers, to access accurate and up-to-date spatial data. Moreover, transparency minimizes opportunities for corruption, reduces the influence of vested interests,<sup>37</sup> and promotes equitable enforcement of spatial planning laws. The theory of spatial justice,<sup>38</sup> on the other hand, emphasizes the equitable distribution of spatial resources and the fair allocation of land use to ensure social and economic justice. Integrating this theory into digital mapping regulations ensures that spatial planning serves diverse community needs, particularly for marginalized populations. Digital mapping, when guided by spatial justice, can highlight disparities in resource distribution and help planners address inequities through evidence-based solutions.

Pancasila, Indonesia's foundational ideology,<sup>39</sup> deeply connects with the concept of spatial justice in spatial planning. Its principles emphasize unity, justice, and humanity, which are essential for ensuring fair distribution of resources and opportunities across all regions and communities. For example, the principle of social justice for all Indonesians directly aligns with spatial justice, advocating for equitable access to land, housing, and public services, especially for marginalized groups. Additionally, just and civilized humanity emphasizes protecting the rights of vulnerable populations and ensuring fair

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<sup>36</sup> Khairunnisa, Tiara and Purnomo, Eko Priyo and Anand, Prathivadi and Hung, Chin-Fu, "Enhancing Local Government Performance in Indonesia: An Open Government Data Perspective". *SSRN*, Available at SSRN: <https://ssrn.com/abstract=5071204>. See also Andersen, Morten Koch. "Why corruption matters in human rights." *Journal of Human Rights Practice* 10.1 (2018): 179-190.

<sup>37</sup> Borlini, Leonardo. "Monitoring and compliance mechanisms as a diagnostic and prognostic tool of international anti-corruption cooperation: A data-driven study." *International Journal of Constitutional Law* 22, no. 2 (2024): 487-513.

<sup>38</sup> Soja, Edward W. *Seeking Spatial Justice*. Vol. 16. University of Minnesota Press, 2013.

<sup>39</sup> Nugraha, Ignatius Yordan. "Abusive Unconstitutional Constitutional Amendments: Indonesia, the Pancasila and the Spectre of Authoritarianism." *Oxford Journal of Legal Studies* 43, no. 2 (2023): 379-404.



treatment in planning processes. By integrating Pancasila's values, spatial planning in Indonesia can address historical inequities and create sustainable, fair development for all citizens.

The following section will show the international debate on planning, showing how global concerns may influence domestic regulations and practices in Indonesia. Firstly, the failure in regulatory practices concerning planning is often attributed to conflicting regulatory objectives. The pursuit of economic growth has, to a certain extent, clashed with the aim of environmental protection within spatial planning frameworks. This perspective is supported by some scholars who highlight the inherent conflict between economic development and environmental preservation.<sup>40</sup> Their explanation revolves around the observation that developing countries that adopt industrial policies but rely on low-level technology tend to experience higher pollution levels. In contrast, developed countries do not face the same paradox, as improvements in environmental quality are witnessed alongside changes in their economic structure.<sup>41</sup>

The next important factor is the complex and top-down nature of the planning process. In Poland, as highlighted by Krajewska, Żróbek, and Kovač (2014), investors must compile voluminous source documents that municipal agencies utilize to grant licenses for property and land development.<sup>42</sup> The political system's structure in Korea, as illustrated by Gallent and Kim (2011), demonstrates a centralized spatial planning governance approach.<sup>43</sup> In Korea, the national government appoints governors, mayors, and other significant local

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<sup>40</sup> Guo, Longlong, and Hongbo Ma. "Conflict between developing economic and protecting environment." *Journal of Sustainable Development* 1, no. 3 (2008): 91-97; Oseland, Stina Ellevseth, and Håvard Haarstad. "Displacing conflicting goals in planning for sustainability? Insights from three Norwegian cities." *Planning Theory & Practice* 23, no. 2 (2022): 233-247.

<sup>41</sup> Liu, Huimin, Bo Huang, and Chen Yang. "Assessing the coordination between economic growth and urban climate change in China from 2000 to 2015." *Science of the Total Environment* 732 (2020): 139283; Hensengerth, Oliver, et al. "How to promote sustainability? The challenge of strategic spatial planning in the Vietnamese Mekong Delta." *Journal of Environmental Policy & Planning* 26, no. 1 (2024): 91-103.

<sup>42</sup> Krajewska, Małgorzata, Sabina Żróbek, and Maruška Šubic Kovač. "The role of spatial planning in the investment process in Poland and Slovenia." *Real Estate Management and Valuation* 22, no. 2 (2014): 52-66.

<sup>43</sup> Gallent, Nick, and Kwang Sik Kim. "Land zoning and local discretion in the Korean planning system." *Land Use Policy* 18, no. 3 (2001): 233-243.

leaders, and the Ministry of Construction and Transportation grants approval for all planning permits.<sup>44</sup>

Boland (2014) raises concerns about the relationship between neoliberalism and planning, wherein planning is structured to meet neoliberal goals.<sup>45</sup> For example, in the early 1980s, extensive tourist projects often threatened the historical and environmental significance of New South Wales' Blue Mountains. Following the local council's application to rezone land on the crest for the resort, environmental non-governmental organizations (NGOs) started to voice their opposition.<sup>46</sup> In addition, three Land and Environment Court petitions against the council's decision were filed by NGOs. The New South Wales Labor Council decided to halt the project in 1985 because environmental preservation was disregarded. Because the measure could impede the project's potential economic benefits, the government enacted special legislation known as the Blue Mountains Land Development (Special Provisions) Act to avoid potential delays, end existing court action, and legalize approval from the Minister for Planning of the resort's development, which began in 1988.<sup>47</sup>

The above-mentioned trends are related with Indonesia's regulation on digital mapping in spatial planning. Specifically, the top-down nature of planning processes in Indonesia mirrors global concerns about rigid frameworks that exclude local stakeholders. Digital mapping, by enabling participatory and decentralized decision-making, can reduce this complexity and empower local communities. Boland's (2014) critique of neoliberal influences on planning is particularly relevant, as Indonesia faces pressures to prioritize economic gains over equitable and sustainable development. By integrating digital mapping into spatial planning, Indonesia can resist such biases, ensuring that environmental and social justice objectives are not overshadowed by neoliberal agendas.

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<sup>44</sup> Gallent and Kim, "Land zoning and local discretion in the Korean planning system."

<sup>45</sup> Boland, Philip. "The relationship between spatial planning and economic competitiveness: the 'path to economic nirvana' or a 'dangerous obsession'?" *Environment and Planning A* 46, no. 4 (2014): 770-787.

<sup>46</sup> Searle, Glen, and Richard Cardew. "Planning, economic development and the spatial outcomes of market liberalisation." *Urban Policy and Research* 18, no. 3 (2000): 355-376.

<sup>47</sup> Kidokoro, Tetsuo, Mihoko Matsuyuki, and Norihisa Shima. "Neoliberalization of urban planning and spatial inequalities in Asian megacities: Focus on Tokyo, Bangkok, Jakarta, and Mumbai." *Cities* 130 (2022): 103914; Su, Xing. "Building new cities in the Global South: Neoliberal planning and its adverse consequences." *Urban Governance* 3, no. 1 (2023): 67-75.

## B. Why Digital Mapping is Important for Preventing Spatial Planning Violations?

Spatial planning serves as a regulatory mechanism involving intentional government actions across various levels<sup>48</sup> to allocate, shape, and coordinate space for different objectives.<sup>49</sup> Key legal aspects addressed in spatial planning encompass boundaries and jurisdiction over areas, conflicts between authorities regarding roles and responsibilities, land ownership and allocation for development, planning procedures, and the enforcement of housing conditions. McAuslan (1981) provides insights into these significant legal issues within the domain of spatial planning.<sup>50</sup> According to Scott (2013) and Daunt (2021), conventional notions of planning, which prioritized limitation and control and focused on land use distribution and design, have been transformed into more positive and holistic challenges requiring multi-sectoral and multi-scalar viewpoints by modern spatial planning.<sup>51</sup>

The regulation guiding spatial planning is critical to the nation's progress for a variety of reasons. According to the United Nations Economic Commission for Europe (UNECE), spatial planning laws balance competing policy objectives or reconcile the various relevant socio-economic needs. In particular, it is critical to promote the effective use of land and natural resources for development while also creating a stable and predictable environment for investment and growth.<sup>52</sup> According to the United Nations Conference on Trade and Development (UNCTAD), it promotes proper development and

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<sup>48</sup> Albrechts, Louis. "Shifts in strategic spatial planning? Some evidence from Europe and Australia." *Environment and Planning A* 38, no. 6 (2006): 1149-1170.

<sup>49</sup> Techera, Erika JE. "The intersection of marine and coastal conservation and nature-based solutions to climate change: Governance insights from Indian Ocean small island States." *Ocean & Coastal Management* 239 (2023): 106579.

<sup>50</sup> McAuslan, Patrick. "The legal environment of planned urban growth." *Public Administration and Development* 1, no. 4 (1981): 307-317.

<sup>51</sup> Scott, Alister J., et al. "Disintegrated development at the rural-urban fringe: Re-connecting spatial planning theory and practice." *Progress in planning* 83 (2013): 1-52; Daunt, Ana Beatriz Pierri, Luis Inostroza, and Anna M. Hersperger. "The role of spatial planning in land change: An assessment of urban planning and nature conservation efficiency at the southeastern coast of Brazil." *Land Use Policy* 111 (2021): 105771.

<sup>52</sup> Stead, Dominic, and Vincent Nadin. *Spatial planning: Key instrument for development and effective governance with special reference to countries in transition*. (New York: United Nations, 2008); Elander, Ingemar, Mikael Granberg, and Stig Montin. "Governance and planning in a 'perfect storm': Securitising climate change, migration and Covid-19 in Sweden." *Progress in Planning* 164 (2022): 100634.

strengthens the capacity to meet infrastructural pressures caused by increased commercial demand.<sup>53</sup>

In Indonesia, spatial planning is based on a hierarchy of laws and government policies that extends from the national level to the province and local levels. Nonetheless, Indonesia is not a federation. In many nations with federal constitutions, spatial planning is a state or municipal affair rather than a federal one, but this is not true in Indonesia, which is a unitary republic. In Indonesia, the central government delegated legislative responsibility to sub-national entities, who are also responsible for implementing central policy decisions at the local level.

Spatial planning is described in Article 1(5) of the SPL 2007 as a complete system comprising the activities of planning, utilizing, and controlling space. The national, provincial, and district governments are given the power under the law to create and carry out general and detailed spatial plans. "General plans" are employed at the macro level to guide overall spatial development. In contrast, "detailed plans" are utilized at the micro level to provide in-depth explanations and specifications based on the general plans.<sup>54</sup> The SPL 2007 through Article 1(2) also governs the use of space and distinguishes between "spatial structure" or *struktur ruang* and "spatial design" or *pola ruang*. The term "spatial structure" refers to an arrangement of residential centers and infrastructure network systems that function as a support for the society's social and economic activity. Meanwhile, "spatial designs" are described as the spatial arrangement that separates regions into protection and utilization areas. Following Article 1(21) of the SPL 2007, protection areas are defined as areas whose major mission is to ensure the environmental sustainability of natural and human-made resources (for example, a residential neighborhood). "Utilization areas" are defined as "*a region whose primary function is utilized due to the presence of natural resource potential, human resources, and human-made resources*".

Some provinces then enacted regulation on the spatial plan. For example, the Regional Regulation of the Special Region of Yogyakarta No. 5 of 2019 on the Spatial Plan of Yogyakarta Special Region 2019-2039 states in Article 4 that this regulation is aimed to realized Yogyakarta as a a center for education, culture and destination area leading world-class tourism by prioritizing integrated development between mitigation-based sectors disasters, spatial features, and the environment. Article 32 then explains that local protected areas

<sup>53</sup> Trade Facilitation, "United Nations Conference on Trade and Development." (2019).

<sup>54</sup> Widiatedja, I. Gusti Ngurah Parikesit. "Fragmented Approach to Spatial Management in Indonesia: When it Will Be Ended?." *Progress in Planning* 83 (2021): 1-52.

include coaster border; river border; and area around the reservoir. Article 33 then states that coastal borders are specified with a width of at least 100 meters for Gunung Kidul Regency and at least 200 meters for the Bantul and Kulon Progo Regencies calculated from highest tide point towards land.

The Regional Regulation of the Province of Bali No. 2 of 2023 regulates the Spatial Plan of Bali 2023-2043. Following Article 5, it is aimed to create space that is safe, comfortable, productive, authentic, competitive, and sustainable as a center for tourism-based green economic activities, agriculture, maritime affairs and creative industries in order to maintain harmony among nature, people, and Balinese culture based on local wisdom values of *Sad Kerthi*<sup>55</sup> and the *Tri Hita Karana*<sup>56</sup> philosophy. Article 33 then explains the existence of local protection areas that include local wisdom area; and border area. Local wisdom areas cover sacred and sanctuary areas. Mountains, lake, marine and coastal areas are the example of sacred areas while temples are examples of sanctuary areas. Regarding border areas, they have spanned beach and river borders; and lake, reservoir, and spring boundaries. Both provincial regulations in Yogyakarta and Bali have stipulated the establishment of protected areas. This implies restrictions or even prohibitions on proposed commercial development projects within these areas. The presence of the digital map of the detailed plan would certainly provide clearer and reinforce the boundaries of these territorial areas, thus aiding in achieving environmental conservation goals."

The JCL 2023 then acknowledges the importance of detailed plan in digital form in providing protection for areas designated as protected areas for social, cultural and environmental reasons. Article 14 of the JCL 2023 emphasizes the need for a clear strategy to oversee the placement of activities and enterprises.<sup>57</sup> District governments are required to provide a detailed plan in digital form that complies with all pertinent specifications. Afterwards, the

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<sup>55</sup> According to Article 1(9) The Regional Regulation of the Province of Bali 2 of 2023 on the Spatial Plan of Bali 2023-2043, *Sad Kerthi* is a Balinese Hindu value that aims to purify and glorify various aspects of life, including the soul (*Atma Kerthi*), the sea and beaches (*Segara Kerthi*), the water source (*Danu Kerthi*), plants (*Wana Kerthi*), humans (*Jana Kerthi*), and the universe.

<sup>56</sup> According to Article 1(10) The Regional Regulation of the Province of Bali 2 of 2023 on the Spatial Plan of Bali 2023-2043, *Tri Hita Karana* is Balinese philosophy emphasizes on balance and harmony in relationships with God, others, and the environment to promote wealth, peace, and happiness.

<sup>57</sup> The Government of Indonesia, *Omnibus Law: The Solution and Legal Breakthrough*, <https://www.indonesia.go.id/narasi/indonesiadalamangka/ekonomi/omnibus-law-solusi-danterobosan-hukum>.

public must have access to this digital map in order to learn about the individual projects' conformity with a detailed plan.<sup>58</sup>

The procedure for issuing the detailed plan is thereafter governed by Government Regulation No. 21 of 2021 (GR 21/2021), which goes into effect on 2 February 2021. According to Article 6 Section 1, Spatial Planning reckons the formulation and consideration of the spatial plan, as well as the preparation of general and detailed plans. Section 4 then indicates that the central and district governments are expected to create and deliver the spatial plan in digital form and in accordance with the Central Government's requirements. According to Article 24 of the GR 21/2021, the detailed spatial plan preparation comprises, among other things, the production of the district-level detailed plan. Section 3 specifies the period of development and decision of the detailed plan, which is no later than 12 (twelve) months from the commencement of the plan's execution. Article 54 then states that the detailed plan is prepared in line with the rules, standards, methods, and criteria established by Ministerial Regulation. Furthermore, Article 56 Section 3 of the GR 21/2021 stated that the detailed plan must include the following elements: the goal of constructing the planning area; a spatial structure plan; a spatial pattern plan; provisions for space usage; and zoning laws. According to Section 4, this type of plan can then be used to: design long-term development plans for districts/cities; prepare medium-term development plans for districts/cities; space utilization and control of space utilization; and decide the placement and purpose of space for investment. This plan is subsequently translated into a map with a scale of 1:5.000 accuracy.

The Minister of Agrarian and Spatial Planning Regulation No. 14 of 2021 (MR 14/2021) on the Guidelines for Developing Database and Presenting Map of Province, District and City spatial planning, as well as a Detailed Spatial Plan Map of the District/City then explains how the map of the detailed plan should be prepared. Article 2 of this regulation states that map data specifications, including: geodetic coordinate system that refers to Indonesian geospatial reference system. Furthermore, the level of accuracy of detailed information in the map for the district's detailed plan is 1: 5000. Article 23 (6) b then explains that the map of detailed plan of districts/cities should include: orientation map; administrative boundary map; land use map; disaster prone map; population distribution map; spatial structure plan map; and spatial pattern plan map.

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<sup>58</sup> The Government of Indonesia, *Omnibus Law: The Solution and Legal Breakthrough*.

Having a digital map at the district level is essential for ensuring compliance with spatial planning laws, particularly concerning commercial tourism developments. These maps serve as a powerful tool for local governments, developers, and communities by offering detailed, accessible, and precise information about blocks, zones, and areas within districts. By delineating what types of activities and projects are permitted or prohibited in specific locations, digital maps eliminate ambiguity and provide a clear framework for planning and decision-making. In the context of commercial tourism, digital maps are particularly valuable as they help enforce spatial planning regulations effectively. With tourism developments often straddling economic and environmental concerns, these maps ensure that projects align with local zoning requirements, preserving environmental integrity and preventing over development. For example, sensitive areas such as protected forests, cultural heritage sites, or residential zones can be clearly marked to avoid unauthorized encroachments or conflicts.

The absence of digital maps creates significant obstacles for district government officials tasked with evaluating whether proposed projects comply with spatial planning regulations. These officials rely on precise spatial data to make informed decisions regarding land use, zoning, and development, ensuring that proposed activities align with existing plans and legal requirements. Without such maps, their ability to assess and enforce adherence to these rules is severely hindered, leading to potential regulatory gaps and mismanagement in spatial planning processes. In addition to supporting government officials, detailed maps are an essential resource for non-governmental organizations involved in monitoring the enforcement of spatial planning laws. NGOs play a critical role in advocating for accountability and transparency in land use decisions, particularly in areas prone to over-development or environmental degradation. When governments fail to uphold spatial planning regulations, the availability of digital maps becomes even more critical. These maps offer NGOs concrete, verifiable evidence to analyze and critique government actions effectively. Such evidence can be used to highlight discrepancies, expose regulatory failures, and advocate for corrective measures. By utilizing digital mapping, NGOs can strengthen their campaigns, enhance public awareness, and put pressure on authorities to address violations and improve enforcement mechanisms. Furthermore, the use of digital maps fosters greater collaboration between stakeholders, including government agencies, NGOs, and the public. These maps create a shared platform of information, facilitating dialogue and coordination to address spatial planning challenges more effectively. They also help to ensure that development projects are not

only compliant with regulations but also aligned with broader goals of sustainability and social equity.

Digital mapping plays a pivotal role in facilitating investments, particularly in ventures such as establishing hotels. For example, when an investor seeks to build a hotel in the South Kuta sub-district, they are required to submit their application to the Badung District Investment Agency. The agency evaluates the proposal to determine whether the proposed site is located within a designated "tourism area" as outlined in the general spatial plan. However, not all tourist destinations in South Kuta are suitable for hotel development, which makes having a detailed plan map of the area indispensable. A detailed map provides precise information about the zones and locations within South Kuta that are approved for hotel construction. This clarity is essential for investors, as it eliminates uncertainty and ensures that their proposed project aligns with local spatial planning regulations. By identifying specific areas where hotel developments are permissible, the map serves as a guiding tool for both investors and regulatory bodies. Furthermore, the existence of a digital map of the detailed plan at the district level may also strengthen the district government's stance. Some investment projects require clearance from the central government's Capital Investment Coordinating Board. A digital map provides a key legal basis for moving forward with investment efforts. Conversely, if these developments contravene this plan, the district administration may reject an investor's application. For example, it may decline a site permission application if it does not follow the district-level detailed plan. This would fulfill the goals of sustainable development through spatial planning.

The availability of a digital map at the district level serves as a crucial tool for enforcing criminal sanctions.<sup>59</sup> According to the SPL 2007, government officials responsible for issuing permits must adhere to existing spatial plans, and any deviation could result in criminal penalties. With a digital map, authorities can easily identify discrepancies between proposed plans and existing ones, providing concrete evidence of violations. This evidence strengthens the case for prosecuting individuals involved in approving spatial planning permissions that conflict with established regulations. By leveraging digital mapping technology, law enforcement agencies can effectively deter unlawful actions and uphold the integrity of spatial planning processes, ensuring that development activities align with established guidelines and contribute to

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<sup>59</sup> Raharjo, Agus, et.al., "The Legal Policy of Criminal Justice Bureaucracy Cybercrime", *Bestuur* 10, no. 2 (2022): 105-122.



sustainable urban growth. Lastly, the digital map also helps to protect the environment and local residents. This kind of map may define which regions are open or restricted to economic endeavors, so safeguarding vulnerable people and natural resources from damage caused by commercial activities.

Despite existing spatial planning laws, consistent breaches occur, notably evident in Bali's tourism projects. In 2018, the resort development plans from the joint venture of Hary Tanoesoedibjo and his business partner, Donald Trump was rejected by local residents because it annexed customary land owned by local communities in Cemagi Village, Tabanan District.<sup>60</sup> In 2021, a hotel construction project in Gianyar had violated the Gianyar District Spatial Plan regarding sacred areas. Particularly, its construction was only 2.5 meters from the Subak Maluang Temple.<sup>61</sup> In 2023, the resort and villa development project in Bugbug Village, Karangasem, Bali, has sparked controversy. Thousands of residents from local villages rejected the construction of this luxury resort because they were seen as exploiting the sacred area of Gumang Temple, Bugbug Village.<sup>62</sup> In the same year, the existence of accommodation near from Goa Lawah Temple, Pesinggahan Village, Klungkung District has been rejected by residents. This is because the accommodation stands in the sacred area of Goa Lawah Temple.<sup>63</sup> In 2024, the Indonesian Forum for the Environment (WALHI) Bali stated that the hotel project in Ubud, Gianyar has violated the Gianyar District Spatial Plan because it is located in the agricultural and plantation zone that is prohibited for commercial activities.<sup>64</sup>

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<sup>60</sup> VICE, *Tak Banyak Pihak Sadar, Bali Terancam Kehabisan Air Tanah Akibat Industri Pariwisata*, VICE, Feb. 26, 2018, at 1, <https://www.vice.com/id/article/3k7j73/tak-banyak-pihak-sadar-bali-terancam-kehabisan-air-tanah-akibat-industri-pariwisata>.

<sup>61</sup> Suara Dewata, *Diduga Langgar Perda RTRW: Pembangunan Hotel Disoroti Dewan*, SUARA DEWATA, Dec. 7, 2021, <https://www.suaradewata.com/read/202112070009/diduga-langgar-perda-rtrw-pembangunan-hotel-disoroti-dewan.html>.

<sup>62</sup> Detik, *Janji Kesejahteraan Di Tengah Penolakan Proyek Resort Mewah Di Karangasem*, DETIK, Jun. 29, 2023, at 1, <https://www.detik.com/bali/berita/d-6797975/janji-kesejahteraan-di-tengah-penolakan-proyek-resort-mewah-di-karangasem>.

<sup>63</sup> Radar Bali, *Warga Tolak Pembangunan Penginapan Di Kawasan Suci Pura Goa Lawah*, RADAR BALI, Oct. 1, 2023, at 1, <https://radarbali.jawapos.com/klungkung/703034493/warga-tolak-pembangunan-penginapan-di-kawasan-suci-pura-go-lawah-begini-alasannya>.

<sup>64</sup> Jawa Pos, *WALHI Bali Desak Hentikan Pembangunan Hotel Vasa Ubud*, JAWA POS, Dec. 30, 2023, at 1, <https://jembranaexpress.jawapos.com/news/2233670974/walhi-bali-desak-hentikan-pembangunan-hotel-vasa-ubud-berikut-ini-poin-poin-pelanggarannya>.

## The Problematic Nature of Issuing Digital Map of Detailed Plans

Prior to the issuance of the JCL 2023, the onerous conditions for releasing the plan, which district governments find extremely challenging to meet, are, to some extent, the primary cause of the delay in the development of the district-level detailed plan. At least fourteen conditions or elements must be achieved according to the Decree of the Agrarian Minister and Spatial Planning No. 8 of 2017. To begin, a single district detailed plan cannot encompass a single city or regency. If a district contains five sub-districts, it must also have five detailed plans. After developing a draft district-level detailed plan, the agency may consult with specialists like as planners and legal academics. A district government then submits a draft of its detailed plan to the province government of Bali in order to get governor's approval. Afterwards, the draft is sent to Geospatial Information Agency (BIG). Every draft map has to be verified in accordance with this agency's criteria. Once this procedure is finished, the document is forwarded to the central government to get the Minister's approval through the Ministry of Agrarian and Spatial Planning. The draft then must be finalized by the district administration and the district legislative body in order for it to become a district regulation.<sup>65</sup>

Unfortunately, it takes at least a few years to complete this procedure. For example, in 2016, the Badung District government released the final draft of South Kuta's detailed plan. After four years, the Ministry of Agrarian and Spatial Planning had still not been approved. This procedure was more challenging since the Central Government may amend the laws addressing the principles of the district-level spatial plan. By the time the Badung District administration finished the detailed plan, the relevant central government laws had changed, which have a higher status in the legal hierarchy of Indonesia than district regulations.

The lengthy process of producing the district-level detailed plan may also be ineffective. For example, under SPL 2007, the district governments may amend its general plan once every five years. If the detailed plan takes four or five years to complete, it may become superfluous if the district administration revises the current spatial plan during that period, which is plausible. This is

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<sup>65</sup> Junef, Muhar. "Penegakkan Hukum Dalam Rangka Penataan Ruang Guna Mewujudkan Pembangunan Berkelanjutan." *Jurnal Penelitian Hukum DE JURE* 17, no. 4 (2021): 373-390; Faxon, Hilary Oliva, et al. "Territorializing spatial data: Controlling land through One Map projects in Indonesia and Myanmar." *Political Geography* 98 (2022): 102651.

because a modification of the general plan necessitates a revision of the detailed plan, and the district administration must then resume the time-consuming process of completing the draft of the detailed plan, albeit not usually from the beginning.

The next concern is the accuracy of spatial plan maps. Each plan must meet a particular degree of accuracy called as 'geometric precision'. District governments must use the BIG's geospatial reference system when developing maps for their detailed plans. To ensure 'geometric accuracy',<sup>66</sup> the BIG approves each draft of the detailed plan's map using a procedure known as 'orthorectification'.<sup>67</sup> The District government finds these map-making processes cumbersome due to a shortage of trained human resources with map-making experience. Therefore, the situation of "over-regulation" and the complex and top-down nature of the planning process are the reason behind the problematic procedure of issuing a map of detailed plan.

The JCL 2023 has stipulated that every districts in Indonesia must issue a detailed plan in digital form (map) that is freely accessible to the public. This map is then integrated into online single submission processes. As a result, when applicants submit a business license, it is expected that they will be able to check the compliance of their company's location by providing the geographical coordinates. The system would swiftly identify whether the proposed firm site is consistent with the present detailed plan. The digital map will significantly encourage investment, according to the Secretary of the Coordinating Ministry for Economic Affairs. The approval procedure starts with acquiring the location's coordinates, and the online single submission service will function flawlessly with a digital map. When the proposed project aligns with the detailed plan, the district authority has the ability to provide location and environmental

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<sup>66</sup> OSSIM, "Orthorectification", online from <https://trac.osgeo.org/ossim/wiki/orthorectification>; Sumarsono, Meika, and Bangun Muljo Sukojo. "Analisa Ketelitian Orthorektifikasi Citra Pleiades untuk Pembuatan Peta Rencana Detail Tata Ruang Terbuka Hijau (Studi Kasus: Kota Surabaya)." *Jurnal Teknik ITS* 5, no. 2 (2016): A842-A845.

<sup>67</sup> According to OSSIM, orthorectification is the process of removing the effects of picture perspective (tilt) and relief (terrain) in order to produce a planimetrically accurate image. The resulting orthorectified picture has a consistent size and depicts features in their 'real' placements. This enables for precise direct measurements of distances, angles, and areas.

clearances.<sup>68</sup> As a result, the licensing process might be simplified and made more transparent.<sup>69</sup>

Regarding the procedure for issuing the district-level detailed plan, Article 85 GR 21/2021 states that once the draft of the detailed plan is completed, the district government must hold a public consultation that involves the district house of representatives and relevant stakeholders. The proposal is subsequently presented to the Minister of Agriculture and Spatial Planning for approval. Before giving approval, the minister will hold a cross-sector discussion with appropriate ministries and agencies to integrate programs or policies within the national strategic program, regional boundaries, coasts, and forest areas. After getting ministerial approval, the draft can be turned into district regulations.

The JCL 2023 seeks to address regulatory and technical challenges, including those related to the issuance of digital mapping in spatial planning, by streamlining bureaucratic processes, integrating digital technologies, and promoting collaboration between stakeholders. The law harmonizes previously conflicting regulations, reducing complexity and delays in spatial planning and development approvals. Furthermore, by mandating the use of digital mapping, the law enhances data-driven decision-making and promotes greater transparency in governance. However, while fostering investments, the law may inadvertently prioritize economic interests over environmental sustainability and social equity in spatial planning. Equally, the integration of digital mapping requires significant technical capacity, funding, and coordination among local governments, which may hinder its full effectiveness. Specifically, the procedures in the issuance of the map of detailed plan seem to not differ significantly from before the issuance of the JCL 2023 and require a lengthy and convoluted process. As illustration, in 2018, just 45 of 1800 district-level detailed plans were converted into maps.<sup>70</sup> Meanwhile in 2024, the Minister of Agrarian and Spatial Planning highlighted the necessity to accelerate the creation of detailed plans in digital form (map), which may be a critical step in

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<sup>68</sup> Ekonomi Bisnis, *Pemda Diminta Susun Peta Digital*, EKONOMI BISNIS, May 9, 2019, at 1, <https://ekonomi.bisnis.com/read/20190509/9/920724/pemda-diminta-susun-peta-digital>.

<sup>69</sup> Indrajit, Agung, et al. "Implementation of the spatial plan information package for improving ease of doing business in Indonesian cities." *Land Use Policy* 105 (2021): 105338.

<sup>70</sup> Kompas, *Baru 45 RDTR Yang Sudah Jadi Ranperda*, KOMPAS, Sep. 21, 2021, at 1, <https://properti.kompas.com/read/2018/09/21/173650121/baru-45-rdtr-yang-sudah-jadi-raperda>.

luring investment to Indonesia. Only 399 maps of detailed plans were produced out of 2000 detailed plans, and only 203 detailed plans were linked to the Coordinating Body of Capital Investment's online single submission system.<sup>71</sup>

## A. Spatial Planning Procedure & The Use of Digital Mapping in Australia

Australia operates under a federal system of government that is organized into three levels of political authority: Commonwealth (national), state and territory, and local governments.<sup>72</sup> This hierarchical structure was established in 1901 when Australia was formed, and it involved the sharing of authority between the national and state governments as defined by the Commonwealth Constitution.<sup>73</sup> It is important to note that the Commonwealth government did not have extensive direct control over matters such as natural resource governance, spatial planning, environmental issues, or land-use regulation.<sup>74</sup> Consequently, each state and territory within Australia has developed its distinct regulatory, statutory, and procedural frameworks for managing planning and land tenure.<sup>75</sup>

Local governments make and settle the majority of planning decisions. This is particularly evident in the case of development options, as most planning applications seeking approval are submitted to and assessed and resolved by local governments rather than state governments. Conversely, strategic planning often receives more significant guidance from state governments, as it entails

<sup>71</sup> Republika, *Perda RDTR Perlu Dipercepat Untuk Tarik Investasi Ke RI*, REPUBLIKA, Jan. 10, 2024, at 1, <https://ekonomi.republika.co.id/berita/s71car502/menteri-atr-perda-rdtr-perlu-dipercepat-untuk-tarik-investasi-ke-ri>.

<sup>72</sup> Williams, Peter. "The 'panelization' of planning decision-making in Australia." *Planning Practice and Research* 29, no. 4 (2014): 426-447.

<sup>73</sup> Maginn, Paul, and Neil Foley. "From a centralised to a 'diffused centralised' planning system: planning reforms in Western Australia." *Australian Planner* 51, no. 2 (2014): 151-162; Lukasiewicz, Anna, et al. "Declining trends in plan quality: A longitudinal evaluation of regional environmental plans in Queensland, Australia." *Landscape and Urban Planning* 203 (2020): 103891.

<sup>74</sup> Ordóñez, Camilo. "Governance lessons from Australian local governments for retaining and protecting urban forests as nature based solutions." *Nature-Based Solutions* 1 (2021): 100004.

<sup>75</sup> Chen, Yuqing, et al. "Linking ecosystem accounting to environmental planning and management: Opportunities and barriers using a case study from the Australian Capital Territory." *Environmental Science & Policy* 142 (2023): 206-219.

the identification of planned or future land uses and implementing legislative planning restrictions. As a result, state governments often bear the primary responsibility for strategic planning at the state and regional levels. However, there is potential for increased collaboration with local governments in regional planning, allowing for more cooperative approaches.<sup>76</sup>

In Victoria, the regulation of land use and development is governed by the PEA VIC 1987.<sup>77</sup> Each municipality within the region has its own planning system managed by the local government. The planning scheme plays a crucial role in determining whether planning permission is required for changes in land use, construction of buildings, or other modifications to the land.<sup>78</sup> The process of developing a planning scheme in municipalities involves specific procedures. It starts with the submission of a planning proposal to the Commissioner of Public Works. The Commissioner then receives a report from the Planning Board regarding the scheme. Following a careful review of the Board's findings, the Governor in council has the authority to adopt the scheme. Following publication of a notice of approval in the Government Gazette, the planning scheme becomes effective.

A planning scheme is a comprehensive document that contains various components, including digital maps that illustrate land zonings and overlays, regulations that define land use rules for each zone and overlay, and state and municipal planning policies like the Municipal Strategic Statement. The zoning system is utilized to determine the primary use of a piece of land, such as industrial, rural, commercial, or residential, and to specify the permissible land uses within that particular area. Typically, the restrictions on land use for each zone are presented in three categories: 1) uses that do not require permits, 2) uses that necessitate permits, and 3) prohibited uses. Additionally, the ordinances within the planning scheme often provide guidelines and specifications pertaining to construction, development, and subdivision.<sup>79</sup>

A planning permit grants permission for the use or development of a property for a specific purpose, but it may be subject to certain conditions to

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<sup>76</sup> Thompson, Ronald L., Christopher A. Higgins, and Jane M. Howell. "Personal computing: Toward a conceptual model of utilization." *MIS Quarterly* (1991): 125-143; Maginn and Foley, "From a centralised to a 'diffused centralised' planning system: planning reforms in Western Australia."

<sup>77</sup> PEA VIC, *The Government of Victoria*, "Planning and Environment Act 1987, PEA VIC (1987), <https://www.legislation.vic.gov.au/in-force/acts/planning-and-environment-act-1987/153>.

<sup>78</sup> PEA VIC 1987, section 6.

<sup>79</sup> PEA VIC 1987, section 6.

ensure appropriate utilization or development of the land. Hence, it is crucial for applicants to thoroughly research the planning scheme before submitting their application.<sup>80</sup> The next step involves preparing and submitting the application to the local council. Following the submission, the council reviews the application and may request additional information or seek referrals if needed. Once these steps are completed, the application is made public for a minimum period of 14 days, using methods such as notifying neighbors through letters, placing signs on the property, and publishing notices in newspapers. The council then evaluates the application, taking into account any objections, potentially organizing mediation meetings if required, and considering referral comments during the evaluation process.<sup>81</sup>

The application of the planning scheme also used to pose implementation challenges in Victoria. Based on finding from Victorian Auditor-General's Office (VAGO), it stated that planning schemes remained too complicated. They were difficult to utilize and implement consistently in order to satisfy the intent of state planning objectives, and there was no confidence that planning decisions will result in the net community benefit and sustainable results that are designed. Furthermore, VAGO explained that much more effort was necessary if the system was to achieve its purpose. A significant focus must be on simplicity, which may be accomplished by defining the system's purpose and removing ineffective controls. This should help to move the attitude away from a controls-based approach and toward a more mature, outcomes-based assessment of all relevant, perhaps contradictory risk variables and consequences.<sup>82</sup>

In response to VAGO's finding, the present Government of Victoria has implemented a smart planning initiative that makes planning information easy to access and understand. It also brings user-friendly digital technologies to increase the accessibility and engagement of information and services. These technologies may be employed to integrate digital platform to replace manual processes; to enable online lodgement and transactions; and to provide an interactive visual tool to provide an authoritative source of zone and overlay information to replace static maps.<sup>83</sup> Specifically, the Government of Victoria

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<sup>80</sup> PEA VIC 1987, section 49.

<sup>81</sup> PEA VIC 1987, section 56.

<sup>82</sup> Victorian Auditor General's Office, *Managing Victoria's Planning System for Land Use and Development*, (2017), <https://www.audit.vic.gov.au/report/managing-victorias-planning-system-land-use-and-development?section=#:-:text=It does this through the,may be used and developed.>

<sup>83</sup> Victorian Auditor General's Office.

has applied a digital mapping tool named 'VicPlan'. This plan is a state-wide map viewer that displays location-based planning scheme information. Residents can employ it to find any property or parcel in Victoria by entering the address/parcel search or browsing the map. They can also find direct links to the planning rules for a specific site inside the planning scheme. VicPlan allows them to generate a Planning property or parcel report that includes localized maps of the zone and overlays. The zone and overlay spatial data are then updated weekly.<sup>84</sup>

The implementation of VicPlan has significantly enhanced spatial planning and public engagement. It serves as an interactive platform that allows users to access detailed information about land use, zoning regulations, and planning schemes.<sup>85</sup> By offering a user-friendly interface and readily available data, the tool empowers both officials and the public to make informed decisions. For example, local governments in Victoria can efficiently assess development proposals against planning rules, while citizens and investors gain clarity on land use constraints and opportunities. This transparency reduces ambiguities and facilitates compliance, fostering trust between stakeholders. Moreover, the tool supports public participation by allowing users to engage with and provide input on proposed planning changes, which enhances community involvement in decision-making processes.

Indonesia could adapt this kind of platforms. VicPlan ensures that users can access spatial planning information from any location, which could address Indonesia's geographic challenges as an archipelago. The integration of real-time updates and zoning changes could also improve Indonesia's regulatory efficiency, particularly in regions facing rapid development pressures, such as Bali's tourism areas. Furthermore, the inclusion of interactive features that allow public input could align with Indonesia's goals of enhancing transparency and community involvement under the JCL 2023. By adopting these proven practices, Indonesia could address existing challenges in digital mapping and strengthen its spatial planning governance framework.

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<sup>84</sup> The Government of Victoria, *Using VicPlan*, THE GOVERNMENT OF VICTORIA, Jan. 17, 2024, at 1, <https://www.planning.vic.gov.au/planning-schemes/using-vicplan>.

<sup>85</sup> The Government of Victoria.



## B. Reforming Digital Mapping Regulation: A Lesson from Australia

Reforming the process of issuing maps for detailed plans in Indonesia by looking at Australia's practices involves considering several factors such as regulatory frameworks, technological advancements, inter-agency coordination, public participation, and capacity building. The existing regulatory frameworks need significant adjustments to make the issuance of the digital map of the detailed plan successful. To begin, the government should reduce the process of developing district-level detailed plans. Because this approach is essentially technical and not political, the current procedure is highly demanding so that it needs to be streamlined. Specifically, after finalizing a draft of the district-level detailed plan, the district governments should submit it immediately to the BIG. The map will be validated using the existing criteria set by this agency. After this step is completed, the draft is delivered to the Ministry of Agrarian and Spatial Planning for approval by the Minister. Next, the district government can transform it into a district regulation.

Therefore, when the current procedures involve 12 to 14 steps, simplification is needed to make the detailed plan issuance process more effective in terms of time, manpower, and cost. Secondly, once this detailed plan is ready and made public, it should not be revised frequently. It would be pointless to implement digital map of detailed plans if they were regularly altered every five years as regional leaders changed. The district administration will only have two years to implement these kinds of plans, which typically takes two to three years to accomplish. It is quite possible to adjust a spatial plan based on previous practices. The SPL 2007 states that spatial plans can only be updated once every five years. However, several implementing regulations allow the spatial plan to be altered to meet economic and infrastructure development needs, reflecting the trend that the existing law has been '*politicised*' or '*economised*.'

Indonesia could adapt Australia's planning permit procedure to streamline the issuance of digital maps, reducing procedural burdens while enhancing transparency. Similar to Australia's approach, Indonesia could require applicants to review digital planning schemes beforehand to ensure compliance, minimizing errors and resubmissions. Applications could then be submitted through an integrated online platform to simplify processes and improve accessibility. Following submission, district governments could make the applications public for a specified period, using online notifications, public

notices, or outreach to stakeholders, allowing communities and experts to provide feedback. By implementing these steps, Indonesia could make the issuance of digital maps more efficient, inclusive, and aligned with its broader spatial planning objectives under the JCL 2023.

Public participation is fundamental to the planning process in both countries.<sup>86</sup> Australia places a strong emphasis on public involvement in spatial planning through consultations and the use of online platforms. These mechanisms enable citizens to actively engage with planning processes by providing feedback on proposed plans, ensuring that diverse perspectives are considered. Indonesia could gain significant benefits by adopting similar digitalization initiatives, particularly through the implementation of digital mapping technologies and online systems for plan submissions and approvals. Such measures could streamline administrative processes, reduce reliance on cumbersome paperwork, and enhance overall efficiency in spatial planning governance. However, translating the concept of public engagement into a legally enforceable and practical framework in Indonesia poses several challenges. One of the most pressing issues is the insufficient emphasis on public discussions and consultations conducted by national and local governments. This lack of engagement often leaves communities feeling excluded from decision-making processes, diminishing public trust and potentially leading to noncompliance with spatial planning laws. Addressing this issue requires a cultural and institutional shift towards prioritizing inclusive practices. By fostering greater transparency and creating opportunities for meaningful public participation, Indonesia can ensure that spatial planning decisions reflect the needs and aspirations of its diverse communities, ultimately strengthening its regulatory framework and governance outcomes.<sup>87</sup>

The establishment of the JCL 2023 has further demonstrated this trend. The latest Constitutional Court decision supports the argument that the statute did not involve the public in the legislative process. The act was declared temporarily illegal, and the court's decision allowed the House of Representatives and the government to amend via a law-making process that included broader public participation.<sup>88</sup> The JCL 2023 emphasizes the

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<sup>86</sup> Foroughi, Mahda, et al. "Public participation and consensus-building in urban planning from the lens of heritage planning: A systematic literature review." *Cities* 135 (2023): 104235.

<sup>87</sup> Walczyna, Beata Patrycja. "Public Participation in Spatial Planning-Evaluation of the Principle." *Forum Prawnicze* 39, no. 1 (2017): 70-79

<sup>88</sup> Constitutional Court, The Constitutional Court Decision No. 91 /PUU-XVIII/2020 Para [3.20.3] at 413 (2020).

importance of public involvement by incorporating the public in the plan's formulation, execution, and oversight. GR 21/2021 also explains the value of public engagement. According to Article 19, public engagement is necessary when developing district-level spatial plans. Article 27 also reinforced the notion, namely in the creation of an island or archipelagic spatial layout. In comparison to the previous version of the SPL 2007, this gives more clarity on when public engagement should take place. Even if the public is involved at all stages of spatial planning, no legal penalties or sanctions are imposed when the government fails to carry out this operation appropriately. As a result, this system will be unable to predict the typical situation in which governments "rig" the system by admitting only individuals who agree with their viewpoints.

In addition to focusing on legal factors, the government should explore reforms that extend beyond regulatory frameworks. The district governments can enhance its planning capabilities by engaging with a diverse range of professionals, including consultants and urban planners, to develop comprehensive digital map of detailed plans. Collaboration between the district government and relevant stakeholders should commence early in the planning process to ensure alignment of objectives and efficient utilization of resources. Moreover, addressing the shortage of qualified city planners could involve categorizing district governments based on priority levels, such as high, medium, or low. This categorization would enable the central government to prioritize the allocation of resources and support to districts based on their level of need. For instance, high-priority regions, particularly those undergoing significant investment, should receive special attention in the issuance of the digital map. This targeted approach ensures that all necessary professionals are dedicated to assisting high-priority districts in completing their detailed plans, thereby maximizing the impact of government initiatives and fostering sustainable development across regions. Engaging a diverse range of professionals, such as consultants and urban planners, to develop comprehensive digital maps can significantly improve planning capabilities at the district level. These reforms could lead to more informed and efficient spatial planning, benefiting industries like tourism, real estate, and infrastructure by providing clearer regulations and development guidance. In addition, local communities, particularly those in remote areas, may experience better access to resources and improved land-use policies.

Lastly, inter-agency coordination is considered crucial in both Australia and Indonesia. In Australia, this coordination is supported by robust mechanisms that ensure seamless collaboration among various government agencies involved in planning and development. These mechanisms include

clearly defined roles and responsibilities, formal communication channels, and consistent intergovernmental engagement. Such a framework ensures that planning processes are efficient and that potential conflicts between agencies are resolved promptly, paving the way for coherent and integrated development strategies. Indonesia, however, faces significant challenges in achieving similar levels of inter-agency coordination. The lack of standardized procedures and overlapping mandates among agencies often result in delays and inefficiencies in spatial planning processes, including the issuance of digital maps. To address this, it would be advantageous for Indonesia to consider adopting a secondment method, whereby one government agency sends an employee to carry out technically-oriented legislation. By doing so, the individual can bring back valuable insights and expertise to their home agency, thereby strengthening overall capacity. Furthermore, once spatial planning information is consolidated, the central government can delegate the task of developing a comprehensive digital plan to the relevant individuals within the agencies. Secondments not only provide government professionals with opportunities to learn new skills but also enable them to gain critical planning experience by working in several departments or groups. This approach fosters the sharing of knowledge and best practices across government entities, particularly those dealing with spatial planning issues. Through secondments, government officials can collaborate more effectively, leveraging each other's expertise and experiences to address complex challenges in spatial planning. In addition, secondments promote a culture of innovation and continuous improvement within the public sector, ultimately contributing to more efficient and sustainable planning and development outcomes. Therefore, prioritizing inter-agency coordination and considering the implementation of secondments can significantly enhance spatial planning efforts in both Australia and Indonesia, leading to more effective and responsive governance processes.

Adopting a secondment method in Indonesia could significantly enhance the technical expertise and capacity of government agencies, creating ripple effects across socio-economic groups, industries, and local communities. By fostering knowledge transfer, seconded employees can introduce innovative approaches to spatial planning, benefitting industries like tourism and infrastructure development through clearer regulatory guidance. Local communities may also gain from more efficient and inclusive decision-making, improving land-use outcomes and reducing conflicts. However, these reforms must ensure equitable representation to address the needs of marginalized groups, ensuring that the benefits of improved governance are distributed fairly across all socio-economic segments.

## Conclusion

Digital map of detailed plans are essential for enforcing spatial planning laws, particularly for tourism projects, offering clarity on permitted areas and aiding officials in ensuring compliance. These maps also empower NGOs to monitor enforcement effectively. Despite existing laws, consistent breaches occur, especially in Bali's tourism sector. The JCL 2023 mandates the issuance of accessible digital maps for detailed plans, integrating them into online submission processes to enhance transparency. However, challenges persist, with a significant backlog of plans awaiting conversion into maps, highlighting the ongoing need for efficiency in Indonesia's planning procedures. In Australia, local governments handle planning decisions, with state guidance in strategic planning, as seen in Victoria's governance under the PEA VIC 1987. Planning schemes that contain digital maps determine land use rules, typically divided into zones with varying permit requirements. Historically, the planning system faced complexity issues, leading to the implementation of the smart planning initiative by the Government of Victoria. This initiative aims to enhance accessibility and engagement through user-friendly digital technologies like 'VicPlan.' By addressing regulatory, technical, and coordination challenges while prioritizing public participation and professional collaboration, Indonesia can streamline digital map issuance processes and foster more efficient spatial planning governance.

Future research should focus on optimizing the implementation of digital maps in Indonesia's spatial planning system, building on the insights from JCL 2023 and international models like Victoria's smart planning initiative. Key areas for investigation include developing strategies to address the backlog of spatial plans awaiting digital mapping, with a focus on improving technical infrastructure and inter-agency coordination. Research should also explore how digital mapping can enhance public participation in planning processes, ensuring that local communities and NGOs can effectively monitor compliance, especially in sensitive sectors like tourism. Comparative studies could examine the effectiveness of zoning and permit systems in both Indonesia and Australia, assessing how digital maps can streamline land use regulations while balancing economic, environmental, and social needs.

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