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# How Urbanization Drives Socio-Spatial Conflicts in Coastal Land Reclamation?

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## ABSTRACT



*In many cities, coastal land reclamation (CLR) is viewed as essential due to the impacts of urbanisation and to address the challenges of land scarcity. However, these approaches often involve complex environmental concerns, technological challenges, and community conflict. This study aims to explore socio-spatial conflicts that occur across different levels of cities in Indonesia, considering their unique characteristics and differences in geography, population (homogeneous, mesogeneous, and heterogeneous), and city status (megapolitan and metropolitan). This research focuses on three cities in Indonesia that have proposed CLR solutions to urbanisation: Jakarta, Makassar, and Denpasar. Data were gathered through observations and a desktop literature review. These data were then qualitatively analyzed using the directed content analysis method with ATLAS.Ti software. The study underscores that political interests significantly influence discussions on land reclamation in heterogeneous cities. In contrast, mesogeneous cities are driven by economic and legal factors, while traditional customs and practices dominate homogeneous areas. Comprehending the issues surrounding reclamation will inform the priorities of government policies based on the area's context.*

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### Highlights:

-The study highlights the factors affecting coastal land reclamation (CLR) across different types of cities in Indonesia, specifically Jakarta, Makassar, and Denpasar. It demonstrates that political interests, economic and legal factors, and traditional customs significantly impact CLR discussions and decisions in heterogeneous, mesogeneous, and homogeneous cities, respectively. By examining these influences, the study underscores the complexity of CLR projects and their implications for urban planning in diverse city contexts.

### Contribution to the field statement:

This research contributes to urban planning and socio-spatial studies by providing a nuanced understanding of how socio-spatial conflicts related to coastal land reclamation manifest across different city types in Indonesia. It emphasizes the need for context-specific approaches in CLR projects, highlighting how local characteristics and priorities should inform government policies and decision-making processes to effectively address the challenges of urbanization and land scarcity.

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### 1. Introduction

Indonesia is an archipelagic nation comprising over 17,000 islands, with 108,000 km of coastline and an estimated 180 cities located in coastal areas (Bintari, 2018; Kharis, 2023). Coastal cities, accounting for 60% of the urban regions in Indonesia, play a crucial role in driving regional development and rely on the wealth of marine resources available. Consequently, expanding land through sea reclamation becomes necessary, albeit controversial. As cities develop and populations grow, changes in land use occur. The lack of a nuanced understanding of planning regulations and implementation strategies tailored for various tiers of cities contributes to significant socio-spatial conflicts around CLR, such as the exploitation of new spaces ranging from neighbourhood scale to state territories (Bhunia et al., 2021; Grydehoj, 2015; Storey, 2018.; Xu et al., 2021), the political elite actors in contestations and tensions by simultaneously encouraging urbanization and leading to highly dense urban development and potentially changing design and crucial management in inland (Grydehoj, 2015; Moretti, 2023), the absence of specific construction guidelines has led to violations (Anggraini, 2019), and organised illegal activities reported by community groups to the court (Bintari, 2018). Spatial conflict can be described as a condition where at least two parties aim to utilize resources, properties, or aspects of a designated area in ways that are incompatible with each other when individuals, neighbourhoods, or communities express intentions to access the public space surrounding their residences for various purposes (Harsritanto et al., 2018). Understanding the issues surrounding reclamation will inform the priorities of government policies based on the area's characteristics. Therefore, this paper aims to understand socio-spatial conflicts arising in various tiers of cities in Indonesia, including different characteristics, populations, and the size and status of the city. Like numerous countries in the developing world, Indonesia has historically depended on and utilized Western technocratic planning methods, characterized by top-down and classical approaches that were prominent during the early post-World War II (Abidin et al., 2011; Prana et al., 2024). The emergence of city divisions based on urban, metropolitan, and megapolitan areas still largely adopts colonial Dutch spatial planning concepts. The status of megapolitan and metropolitan cities as consequences of urbanisation and agglomeration is believed to influence the upheaval of reclamation in city regions.

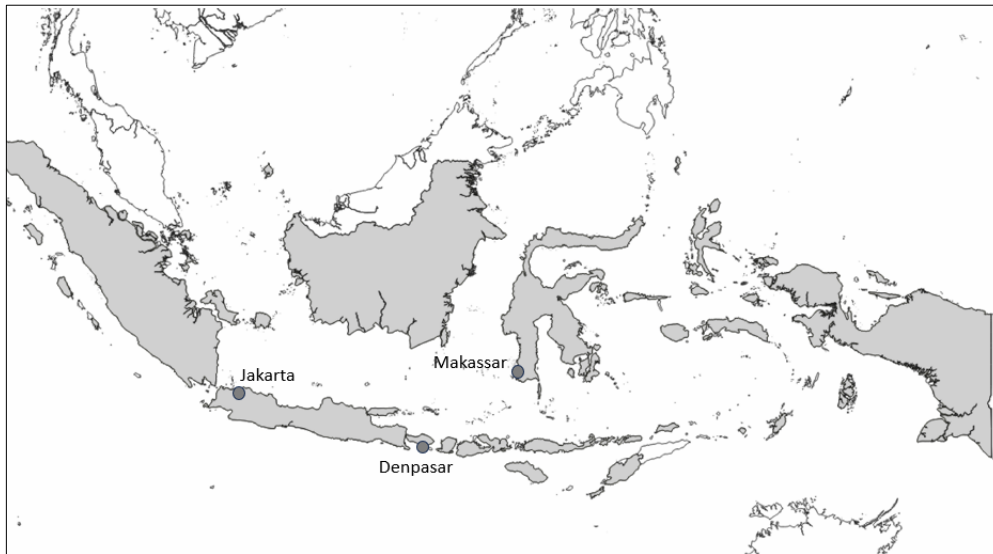
**Table 1:** Criteria of Selected Case Study.

	City and Level of Status		Coastal Reclamation Project	Level of Heterogenous – Mesogeneous – Homogeneous Population and Publicity
	City	Megapolitan-Metropolitan Areas		
1	<i>Jakarta</i>	<i>Jabodetabekpunjur</i>	1. <i>Jakarta</i> 2. <i>Mamuju</i> 3. <i>Makassar</i> 4. <i>Denpasar</i> 5. <i>Manado</i> 6. <i>Tangerang</i> 7. <i>Ternate</i> 8. <i>Padang</i> 9. <i>Semarang</i> 10. <i>South Aceh</i>	1. <i>Jakarta</i> 2. <i>Makassar</i> 3. <i>Denpasar</i>
2	<i>Surabaya</i>	<i>Gerbangkertasusila</i>		
3	<i>Bandung</i>	<i>Cekungan Bandung</i>		
4	<i>Medan</i>	<i>Mebidangro</i>		
5	<i>Palembang</i>	<i>Patungraya Agung</i>		
6	<i>Semarang</i>	<i>Kedungsepur</i>		
7	<i>Makassar</i>	<i>Mamminasata</i>		
8	<i>Batam</i>	<i>Batam Raya</i>		
9	<i>Bandar Lampung</i>	<i>Balameka Pringtata</i>		
10	<i>Pekanbaru</i>	<i>Pekansikawan</i>		
11	<i>Padang</i>	<i>Palapa</i>		
12	<i>Malang</i>	<i>Malang Raya</i>		
13	<i>Samarinda</i>	<i>Sambo Tenggara</i>		
14	<i>Denpasar</i>	<i>Sarbagita</i>		
15	<i>Tasikmalaya</i>	<i>Priangan Timur</i>		
16	<i>Serang</i>	<i>Serang Raya</i>		
17	<i>Pontianak</i>	<i>Pomekurala</i>		
18	<i>Banjarmasin</i>	<i>Banjarbakula</i>		
19	<i>Surakarta</i>	<i>Solo Raya</i>		
20	<i>Mataram</i>	<i>Mataram Raya</i>		
21	<i>Manado</i>	<i>Birmindo</i>		

This study selects three cities out of approximately ten cities in Indonesia engaging in CLR. Apart from the criteria in Table 1, this study establishes Jakarta, as the former capital city of Indonesia and the first city to conduct reclamation; Makassar, which represents the only city with its city centre located in the

central business district on the Indonesian waterfront and undergoing reclamation; and Denpasar, as a case study due to its critical and controversial location concerning reclamation, considering the powerful Indigenous and cultural factors. Three case studies embody metropolitan or megapolitan city status, each with distinct geographical, social, and economic contexts, allowing for a comprehensive analysis of reclamation projects' diverse impacts and challenges. The outcome is highlighted:

1. Heterogeneous city: Jakarta, with a diverse population scale as megapolitan.
2. Mesogeneous city: Makassar, a metropolitan area of medium size in population composition.
3. Homogeneous city: Denpasar illustrates a metropolitan area characterized by a uniform population in terms of local values.



**Figure 1.** Map of Indonesia and Selected Cities.

The previous literature on reclamation in the three case studies has been presented separately in some references, mainly from marine and fisheries engineering perspectives and social and economic aspects, and typically focuses on individual case studies. There has not been any research comparing more than one or two reclamation projects, especially within the scope of spatial conflicts. As a result, this research can fill that gap by providing a detailed comparison among these CLRs, examining their similarities and differences, which have not been undertaken before. This article provides an overview of the types of urban categories and the factors that contribute most to each case study, distinguishing them from other places' reclamation implementation in Indonesia.

This paper is structured: the subsequent part offers methods, followed by a literature review on reclamation efforts in Indonesia, focusing on three specific sites and the observed patterns in the reclamation process. Subsequently, we elaborate on the status of each city concerning its population and urban agglomeration, as well as the factors influencing reclamation. Finally, we present a conceptual framework for land reclamation in Indonesia based on city characteristics.

## 2. Methods

The methodology is qualitative, including socio-spatial and planning regulatory data. The method is a case study, with the case under investigation being the spaces that are reclaimed and their relationship with planning processes and social perspectives. This paper also uses a comprehensive review of policy, publicly available regulatory decisions, and public media addressing the developments and conflicts. Two of the reclamation projects (in Jakarta and Makassar) were visited for direct observation. Based on academic articles and online news, the literature review methodically collected and summarized existing literature into spatial planning with a socio-maritime scope, including Maritime Spatial Planning (MSP) and marine-eco-engineering. Specifically, several articles on project company websites, such as property



developers and global services providers operating locally or internationally in the maritime infrastructure and dredging services sectors, were identified and used.

The qualitative analytical method identifies recurring themes, patterns, and areas of knowledge gaps while abstaining from conducting fresh empirical studies. After scrutinizing articles from scholars in both English and Bahasa Indonesia sources, policies, and regulations, they were reviewed to eliminate irrelevant articles. All gathered data will then be classified based on reclamation project location and then extracted and analyzed using ATLAS.ti software. This software will highlight the keywords and significant information through Word cloud Verbatim, then appear in the network based on uploaded documents.

### 3. Spatial Conflict and Coastal Land Reclamation

Based on Gresch & Smith (1985), spatial conflicts may arise regarding the exact location of development, but their effects may extend to broader regional consequences. The peaceful utilization of space within a region is hindered when conflicting approaches to spatial control emerge, whether stemming from competing elites and counter-elites within a singular socio-spatial framework or across various socio-spatial systems led by distinct elite groups (Biagini, 1993). Land conversion and urban expansion can manifest in planning across multiple scales, ranging from regional issues triggered by individual spatial conflicts. Spatial conflict also represents the interactions between humans and their land and embodies a competitive process and a strategic allocation of spatial resources driven by their scarcity and the overflow of functions (Zheng et al., 2022). Areas that are highly accessible, such as the central districts of cities, zones in transition changing, and expanding areas needing land for diverse purposes, are susceptible to spatial conflicts. In Southeast Asia, coastal land reclamation reveals conflict at these scales. Massive reclamation activities have disturbed security, stability, and peace. On a large scale, in the South China Sea, for instance, China continues to build artificial islands in disputed areas where the Philippines, Taiwan, Malaysia, Vietnam, and Brunei also have claims. More widely, Dong et al., (2023) suggest that from 1990 to 2020, there was a notable increase in artificial surfaces, constituting 9.2% of the total area across SEA in port cities in coastal areas. The conversion of cultivated land emerged as the primary factor driving the substantial growth in artificial surface, both in terms of overall expansion and spatiotemporal alterations.

Additionally, CLR requires imports and movements of sand as the primary material, which has triggered conflicts across the region. For example, Singapore has significantly expanded its land, largely through sand sourced from neighbouring countries such as Malaysia, Indonesia, and Cambodia (Cipriani, 2022; Maru, 2023). The issue of private companies' sand extraction from Indonesia has resulted in ecological problems spilling over to Malaysia (Koh & Lin, 2006).

The discourse surrounding technology in CLR is significant for sustainable development and addressing environmental concerns. Several countries increasingly undertake reclamation through Coastal Dune Protection and Restoration and Integrated Coastal Zone Management (ICZM). In terms of material and method replacements, for example, Kitazume (2022) outlines the Tokyo Port project that utilized various materials, including dredged soil, waste, calcium, fly ash, and plastics, to replace conventional materials. In Palm Jumeirah, Dubai, the Integrated Greening of Grey infrastructure (IGGI) involves various techniques such as modifying the composition of building materials, transplanting organisms onto other substrates to gain multiple biodiversity benefits, and adding topographic complexity (Firth et al., 2020, 2024). Due to logistical and financial constraints, the IGGI experiments have been limited to a small scale in operational construction (Firth et al., 2024). Many coastal countries mandate the establishment and management of Marine Protected Areas (MPAs) as an effective tool for safeguarding biodiversity and supporting communities in CLR. Public participation in MPAs has effectively reduced conflicts and promoted sustainable management practices by empowering local communities and participatory planning. MSP is still in its early stages in SEA, with limited implementation.

The land reclamation process has also been significantly influenced by ethnic and community relationships, particularly regarding the relationships between indigenous peoples and new settlers, as seen in Malaysia and Taiwan. The history of land reclamation in Taiwan reflects the expansion of the Han Chinese population onto the island, resulting in the displacement and marginalization of Indigenous groups





(Chen, 1998). Meanwhile, in Malacca, the 'war of sand' is not just about acquiring real estate or resource procedures with severe ecological and environmental consequences but rather an implicit conflict targeting *Bumiputera* (Indigenous) and religious communities (Cipriani, 2022). The reclamation policy indicates coordination in both international and community engagement (Tarigan & Tirtamulia, 2023; Wilke, 2023). Japan's traditional knowledge system, known as "*satoumi*," combines local wisdom and scientific knowledge to manage coastal areas. Public participation has been presented in the scope of ASEAN since its formation in 1985 through the "ASEAN Agreement on the Conservation of Nature and Natural Resources". This policy regulates public involvement in environmental issues. The trend of GDP per capita is related to CLR reclamation while damaging coastal wetlands (Tian et al., 2016). In Malaysia, coastal communities face pollution, disrupted livelihoods, habitat loss, decreased biodiversity, landscape changes, erosion, tourism threats, and wave surges from land reclamation (Chee, 2023; Hossain et al., 2019). The coastal cities are particularly susceptible to environmental shifts that affect intricate socio-ecological systems (Abustan et al., 2023; Arifin et al., 2023). The lower socioeconomic status is further impacted by losing agricultural land and residential to erosion, hindering their ability to adapt due to limited resources and infrastructure and territorial disputes (Ritohardoyo et al., 2017; Sparke et al., 2004).

#### 4. Land Reclamation in Indonesia

CLR conflicts in Indonesia are vertical (government vs. community, central vs. regional) and horizontal (pro vs. contra communities, inter-agency conflicts). Authority disputes among agencies, such as the Ministry of Agrarian and Spatial Planning, the Ministry of Maritime Affairs, and the Ministry of Transportation, have emerged (Faiqotul Mutia et al., 2019; Mutia & Asteria, 2018; Mutia & Herdiansyah, 2019). In Indonesia, self-reliant community organizations and non-governmental organizations such as WALHI (Indonesia Forum for Environment) have actively raised public awareness of environmental policy and provided legal assistance for advocacy, including CLR, deforestation, and other harmful environmental practices. However, their efforts have been hindered by some who are opposed to development, even from communists. Additionally, the emergence of political ecology as a powerful force shaping public perceptions and actions in narratives and discourse about environmental problems serves to legitimize all involved actors, resulting in a slight difference in the outcomes between pro and contra-reclamation (Faiqotul Mutia et al., 2019).

##### 4.1 Jakarta Reclamation

Jakarta, Indonesia's capital city, is a megapolitan area influenced by two distinct urbanization processes. One process centre on the expansion of a dominant primate city, while the other involves the integration of smaller cities within the Jakarta-Bogor-Tangerang-Bekasi-Cianjur (Jabodetabekpunjur) area, each with relatively equal significance. This transition positions Jakarta to evolve into a megaregion akin to its global counterparts like Kuala Lumpur and Singapore. Based on (2015), megaregions are expansively urbanised areas driven by their size or global importance and intricate urban and power dynamics. Megapolitan regions represent integrated networks comprising principal cities, metropolitan areas, and micropolitan areas (Lang & Knox, 2009). Jakarta has a magnetic influence as a political hub, playing a crucial role in shaping the transformation of surrounding metropolitan areas and regencies.

As Jakarta experiences rapid urban growth, there is significant pressure to expand its land area to meet the needs of its exploding and growing population and infrastructure demands, which are closely connected to national and international hubs. Jakarta's strategic location creates reclamation in a crucial area for the region's development, facilitating international logistics connections and streamlining transportation networks. Conflicts of interest arise from the expectation that commercial and business areas will generate more revenue for the region despite the environmental and social issues raised in areas like North coastal Jakarta from 1985 to 2005, based on Spatial Plan DKI Jakarta. The first reclamation is situated at the intersection of port areas and informal settlement zones and is set to be developed into a luxurious district catering to the elite. The reclamation of Jakarta Bay's 17 islets is causing controversy as residents are excluded from the project. The emphasis on reclamation tends to prioritize economic growth over addressing ecological and social considerations, as demonstrated by the financial losses for marginalised

people such as fishermen due to the reduction of fishing zones and the increased poverty rate in waterfront settlements (Mutia & Asteria, 2018; Patawari et al., 2022), and disrupt marine biota (Adharani et al., 2019; Faiqotul Mutia et al., 2019). Land reclamation in Jakarta has detrimental impacts, such as water crises, flooding, and land subsidence, leading to economic problems (Abidin et al., 2011, 2015; Colven, 2023). The sinking of land in Jakarta can stem from four main factors: excessive withdrawal of groundwater, the weight of buildings and infrastructure, densely populated real estate development, the natural settling of alluvial soil, and tectonic movements. Even though tectonic activity appears to have the most minor influence, while excessive groundwater extraction is recognized as a significant contributing factor, all ecological effects correlate with post-construction reclamation (Abidin et al., 2011). The North Jakarta reclamation, part of the 2014 National Capital Integrated Coastal Development (NCICD) plan to combat land subsidence, became a major issue in the 2017 DKI Jakarta Governor Election when Anies Baswedan defeated incumbent Basuki Tjahaja Purnama by pledging to halt the project (Charles, 2018). Criticized for benefiting the wealthy and linked to a corruption scandal, the project faced significant controversy.



**Figure 2.** Existing and Proposed Jakarta CLR in Jabodetabekpunjur Megapolitan Areas (source of images: adapted from Google Earth, 2024).

#### 4.2 Makassar Reclamation

CLR in Makassar has been implemented in several areas, particularly along the west coast. Notably, the reclamation of Losari Beach commenced in 2003, followed by the reclamation of the Central Point of Indonesia beginning in 2013. The pattern and motive behind the reclamation in Makassar initially originated from government-led initiatives in the northern and western parts of the city. Government buildings under provincial authority will be constructed on the reclaimed land alongside high-end housing and associated facilities. Subsequently, private entities, including local and national entrepreneurs, took charge, seeking to acquire coastal land for both formal and informal residential areas. The process of urbanisation has accelerated informal settlement and, consequently, led to increased reclamation activities by communities. This is driven by the growing need for space to accommodate various activities and reshape the city's waterfront morphology. Reclamation is also justified to enhance community access to the sea and small islands. A linear promenade was initially established along the Losari Beach waterfront to facilitate local street vendors. However, it has since been extended through reclamation efforts, facilitating direct access to the water environment. The dredging company Boskalis was chosen for the project, but controversy arose regarding land acquisition issues within the Mamminasata Metropolitan Area and across provinces.

Despite the general understanding that natural elements like geomorphology, weather, vegetation, and artificial factors such as policies, institutions, socio-economics, and technology often influence land-use changes, highlight specific factors along the Makassar coastline (Maulana et al., 2023; Xu et al., 2021). The noticeable accumulation of quickly settling organic matter is influenced by water currents that cannot transport it far into the sea. This phenomenon is also affected by bathymetry, aquatic substrates, human activities, and aquatic vegetation. Initially, autonomous governance from provincial and city governments played a significant role, with a heightened focus on all reclamation actors. However, attention gradually diminished over time due to internal disputes among agencies related to policy and decision-making

involving private property companies. Consequently, some land reclamation projects have experienced delays, and others have been indefinitely halted.

The issue of displacement is not as widespread as in Jakarta because Losari remains a public space that stretches towards the sea, serving as a gathering place for locals. However, the threat to local livelihoods remains significant, especially for jobs like fishermen, shellfish farmers, and street vendors. As compensation for the economic development mainly targeting the upper-middle class, high-rise apartments like Lette public rental flats are provided for housing allocation.



**Figure 3.** Current and Proposed Makassar CLR in Mamminasta Metropolitan Areas  
(Source of images: Google Earth, 2024).

### 4.3 Denpasar Reclamation

The Coastal Land Reclamation (CLR) started in 2012 as part of projects such as the construction of highways and other facilities, as Bali was designated a focal point for tourism in Indonesia's development master plan. CLR led to protests by the Bali People's Forum to Reject Reclamation. Known as Ngurek, these protests symbolize sacrifice for a higher purpose, similar to Puputan battles in Balinese history. Moreover, Bali's status as a premier tourist destination has intensified local community opposition to reclamation projects, which conflict with local religious and cultural beliefs. Today, the Balinese people are determined to fight against investors seeking to develop Benoa Bay, covering 1,988 hectares, which holds strategic importance for tourism and politics, situated in the 'golden triangle' linking Sanur, Kuta, and Nusa Dua. This resistance represents a modern-day puputan, echoing historic battles against colonial rule. The Benoa Bay reclamation project has drawn public attention, with several community groups opposing it due to concerns about potential flooding in fishing villages. Demands to halt the reclamation plan involve calls to revoke the Presidential Regulation (Perpres) No. 51/2014, signed by former President Susilo Bambang Yudhoyono. This regulation changed Benoa Bay's status from a conservation area to an economic and tourism zone. Benoa Bay is a significant investment focus within the Masterplan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI), identified as part of the Economic Corridor for Bali and Nusa Tenggara.

According to Wisha et al., (2018), reclamation projects affected seawater flow patterns, with simulations showing a decline in 2016 compared to the stable flow in 1995. Apart from environmental issues, the most distinctive aspect of reclamation in Bali lies in the integration of religious and cultural elements, called the "anti-reclamation movement," drawing upon religious and cultural values as new colonialism. The movement eventually embraced Balinese identity as a unifying force, transcending class, and regional divisions to mobilize widespread opposition to reclamation projects. The highlights of the environmental, economic, and social impacts of reclamation, led to significant protests representing a supermajority of Balinese. The movement's success challenges the notion that ethnic identity only gains political significance when it forms minimum winning coalitions, showcasing the power of collective identity in shaping political action (Tans, 2021). Furthermore, reclamation in Bali has become a subject of art linked to the development of a civilization that indicates green governmentality (Wittesaele, 2021).



Based on Cipriani, (2022) and Simic (2020), the local community embraces various 'spaces' and levels of coastal reclamation, often dealing with insufficient potential across different periods, ranging from traditional city development, modernism, and contemporary times, each having distinct meanings for the acquisition process: 1) they physically reclaim the site, 2) they reclaim the right to a space for all, not just for the interests of a few, and 3) they reclaim their own racial, religious, cultural and political systems and identities. The reclamation plan aims to generate profit by creating new land for development, benefiting large investors with exclusive areas. Waterfront areas face issues related to underutilization across various periods, whether traditional, modern, or contemporary urban contexts.

The controversial CLR project poses a significant threat to traditional cultural holy sites, encompassing 60 sacred, 30 Indigenous villages with unique religious rituals and customs practised in surrounding villages (Ardhana & Farhaeni, 2017; Subekti et al., 2020). The Benoa reclamation plan contradicts the Tri Hita Karana principle, cherished by the Hindu community. This concept emphasizes the harmonious relationship between humans and other humans (Pawongan), humans and God (Parahyangan), and humans and nature (Palemahan). The reclamation enables ritual land, contrary to the philosophy of Rta (Natural Law) - a buffer of the world in Balinese Hinduism (Subekti et al., 2020). In sum, the reclamation response in Bali is an application of bio-social entities, which presents the involvement of planetary urbanism encompassing natural materials, earth, and local culture (Catterall, 2014).

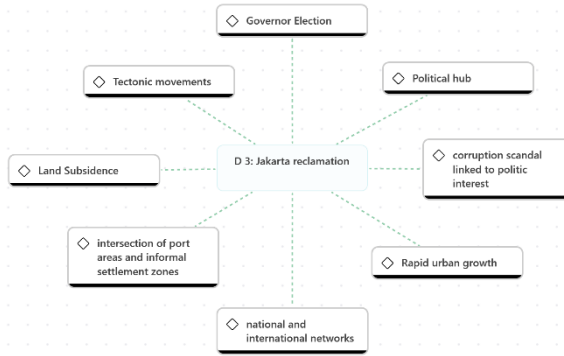
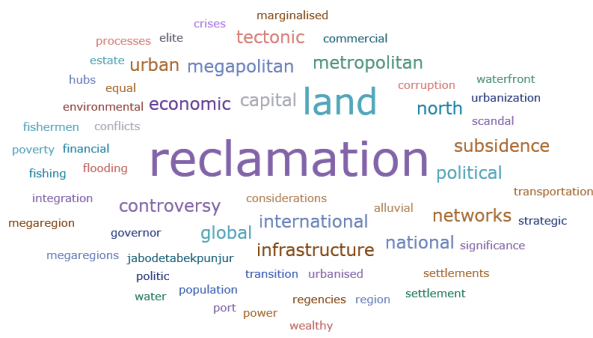


**Figure 4.** Existing and proposed Bali CLR in Sarbagita Metropolitan Areas (Source of image: Google Earth, 2024).

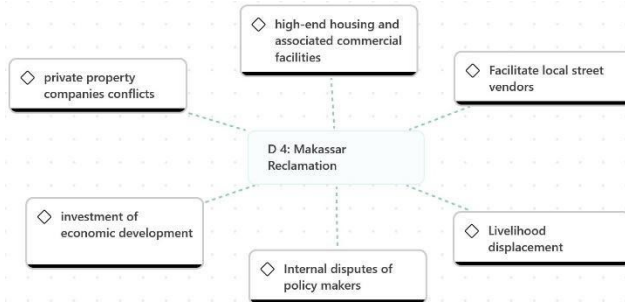
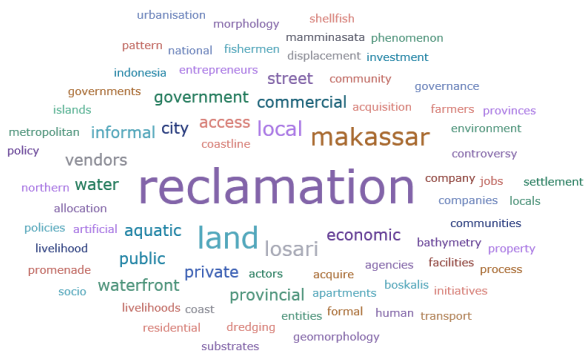
#### 4. Results

The presence of CLR in various cities in Indonesia is closely related to urbanization. Urbanisation indicates that politics influence space and becomes transactional for the stakeholders involved. This systematic approach reflects the conflicts arising from horizontal interactions among regional agglomerations, including municipal and district scales within megapolitan or metropolitan areas, and vertical interactions between central policymakers and local governments. The city is the medium for contestation with its complex relations between social and spatial forms (Gibson, 2023; W. Soja, 2014). According to Chang & Huang, (2011), there are three critical elements of reclamation: access, land use functionality, and local symbol or identity—vital elements for other cities undergoing inevitable transformation. The city transformation in megapolitan, or metropolitan urbanisation marks a unique stage in the evolution of industrial capitalist cities as land reclamation practices. Urbanisation driving CLR is an accumulation of mega and metropolitan areas. Based on the literature review, each case study has its own highlights. The results of this literature review are summarized in a verbatim word cloud analysis that identifies key terms and then highlights the factors most influential in CLR.

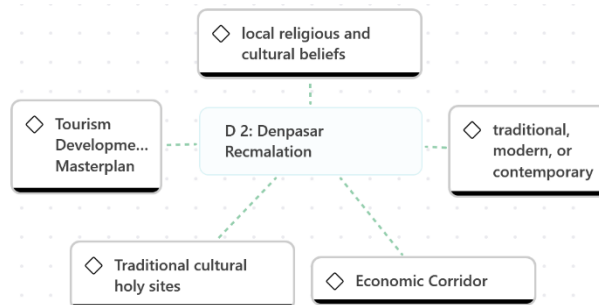




a. Jakarta Reclamation



b. Makassar Reclamation



c. Denpasar Reclamation

Figure 5. Word Cloud Verbatim and Atlas Analysis from Literature Review.

Table 2: Metropolitan Areas and CLR Case Studies. Source: compiled by the authors 2024.

Case Studies	Metropolitan Areas	Area (km <sup>2</sup> )	Estimated Population	Estimated Land Reclamation		
				Locations	Coast Line (km)	Reclamation Area (ha)
Jakarta	Jabodetabekpunjur <ul style="list-style-type: none"> <li>● Special Capital Jakarta</li> <li>● City of Bogor-City of Depok</li> <li>● City of South Tangerang</li> <li>● Bekasi Regency</li> <li>● Cianjur Regency</li> <li>● Tangerang Regency</li> </ul>	7,062.47	33,430,285	<ul style="list-style-type: none"> <li>● Special Capital Jakarta</li> <li>● Tangerang Regency</li> </ul>	120	5100
Makassar	Mamminasata <ul style="list-style-type: none"> <li>● City of Makassar</li> <li>● Gowa Regency</li> <li>● Maros Regency</li> <li>● Takalar Regency</li> </ul>	2,667	2,621,168	<ul style="list-style-type: none"> <li>● City of Makassar</li> </ul>	100	157
Denpasar	Sarbagita <ul style="list-style-type: none"> <li>● City of Denpasar</li> <li>● Badung Regency</li> <li>● Gianyar Regency</li> <li>● Tabanan Regency</li> </ul>	732.67	2,388,680	<ul style="list-style-type: none"> <li>● City of Badung</li> <li>● Badung Regency</li> </ul>	633.35	1998



Table 2 depicts Jakarta's extensive metropolitan area, Jabodetabekpunjur, based on Presidential Regulation 54/2008, including five satellite cities and three regencies in West Java Province and South Tangerang Province. With a population exceeding 33 million and categorized as a megapolitan area, this urban agglomeration underscores the intensity of urbanization and spatial conflicts within Jakarta and its neighbouring areas. The issues of CLR encompass a range of complexities, from governance and economic viability to environmental sustainability and diplomatic relations even before and after the relocation of Indonesia's capital city.

With a population exceeding 2.6 million as a metropolitan city, Makassar underscores the significant demographic concentration amidst ongoing reclamation projects along the coastal areas scattered in three neighbourhood regencies from *Mamminasata* Metropolitan Areas, namely Sungguminasati-Gowa Regencies, Maros City-Maros Regency and Takalar City-Takalar Regency. Despite being dominated by Bugis and Makassar ethnic groups, the influx of urbanisation has transformed this city into a metropolitan area in population scale, size and infrastructure availability, driving spatial dynamics that reflect the interplay between urbanization and cultural heritage. Its status as the largest city in the eastern region of Indonesia has made it a key economic driver for the surrounding area, particularly through the expansion of reclaimed land with the development of Meetings, Incentives, Conferences, and Exhibitions (MICE) activities, which collectively represent the convention and events industry. However, this growth is not accompanied by clarity regarding who is responsible for the reclamation efforts undertaken by both private and public sectors. The Denpasar metropolitan area, known as Sarbagita, encompasses the city of Denpasar and neighbouring regencies like Badung, Gianyar, and Tabanan, which feature a robust tourism industry. With a population of over 2.3 million, the region is shaped by the dominance of Indigenous customs and traditions, particularly among the strong-rooted ethnic groups, contributing significantly to the urbanization process in Denpasar City and Badung regency, priority areas for coastal reclamation projects.

## 5. Discussion

The pace of urbanization increasingly influences the acceleration of spatial needs for living, resulting in the creation of new spaces for activities such as land reclamation occurring not only in megapolitan and metropolitan areas but also extending to the scale of districts, which can be termed micropolitan, signifying the transition from rural to urban areas. The three case studies involve private and government actors, posing challenges for government intervention due to personal connections, including family or colleagues, with local authorities. Policies and regulations regarding reclamation have sparked disputes among various departments within ministries, provincial governments, and municipal governments.

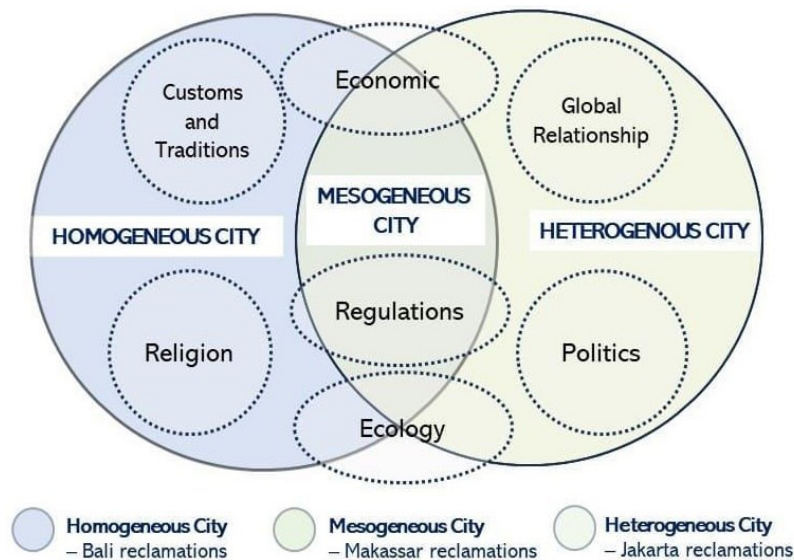
The trend of mega projects, such as reclamation, often arises from fear, especially when conducted without transparency in scientific processes, and can harm residents' livelihoods (Baba et al., 2023). It continues to unfold in Indonesia, extending beyond megapolitan and metropolitan cities to encompass secondary urban centers. Jakarta stands as an initial case study, revealing the intricate dominant factors and effects of reclamation, which proves challenging due to its status as the capital city and the surrounding conurbation, making it a victim of political agreements. The city's heterogeneous, pluralistic, and religiously diverse further complicates matters, turning every space into a contested arena. The population and ethnic configuration of Jakarta were documented, and Jakarta was home to at least seven prominent ethnic types.

In Makassar, reclamation efforts have primarily been initiated by the government despite ample undeveloped lands in the Southern areas capable of meeting land use requirements. The delineation of coastal land targeted for reclamation remains ambiguous. Environmental concerns regarding reclamation are shared among districts on the coast and small islands. The boundaries of territories pose challenges in determining the location of reclamation and the pivotal roles of the agencies involved. This reality aligns with what Elden, (2010); Paasi, (2009); and Storey (2018) stated about territory networks. Although Makassar appears ethnically diverse, its population primarily comprises ethnic groups native to the Sulawesi islands, notably the Makassar and Bugis, with smaller representations from other Sulawesi-based

ethnicities like Toraja, Mandar, and Buton, among others. This diversity falls between heterogeneous and homogeneous, with social and territorial boundaries still manageable.

In Bali, where cultural heritage and tourism are paramount, reclamation efforts must balance economic gains with preserving indigenous customs and traditions. Similarly, in Jakarta, conflicts over reclamation projects highlight the importance of considering public access to coastal zones amidst rapid urban expansion. Meanwhile, the transformation into a metropolitan area in Makassar underscores the need to safeguard local identity while addressing the economic imperative driving land reclamation initiatives.

CLR in Bali is deemed necessary, given its status as a premier tourism destination. However, the situation is exacerbated by the ownership of reclaimed lands falling into the hands of foreign investors, particularly international companies, despite regulations governing ownership percentages. In Bali, renowned as a representative of Hindu religions in Indonesia, local communities have the privilege of spearheading development projects. Most of Bali's population is of Balinese ethnicity, with approximately 86% adhering to the Hindu religion. The significant influence of social media as a response reclamation is the highest authority in halting any endeavours deemed inappropriate with religious principles. This reflects a homogenous principle, given Bali's status as the only province with a predominantly Hindu population. Based on the discussion, Figure 6 illustrates the connections between the criteria selected for the chosen CLR case studies.



**Figure 6.** Urban Character, Scale, and Land Reclamation Factors.

CLR in Indonesia is primarily driven by the urgent need for infrastructure development to cope with land scarcity and population growth. The lack of a specific sustainable reclamation model, especially in Jakarta, exacerbates environmental challenges (Azwar et al., 2013). Unplanned and poorly executed initiatives in Bali and Makassar highlight the absence of government oversight, leading to detrimental future consequences in spatial planning. The unique challenges in SEA stem from a combination of factors such as diverse ethnicity, varied landscapes, and limited resources, making it difficult to establish standardized policies for CLR. In SEA, political motives often drive reclamation efforts, unlike in Western countries where local traditional or cultural elements have limited influence due to stringent adherence to environmental, engineering, and economic considerations. Projects in cities like Jakarta become tools for political campaigns, resulting in biased decision-making processes that neglect environmental concerns. In developed countries, conflicts related to local fishermen are less common, as reclamation projects are typically executed with thorough consideration of environmental impact assessments, engineering feasibility, and livelihood. However, in Asia, local fishermen often oppose such projects, fearing harm to their catch and increased transportation costs due to travelling further out to sea. Religion plays a minimal role in Western countries' reclamation due to the separation of religion and state; decisions are based on technical, economic, and environmental factors. In contrast, in SEA, where cultural and religious factors often influence decision-making, the lack of standardized policies exacerbates challenges in balancing





economic development with environmental sustainability in coastal land reclamation. Despite differing approaches, Western countries and SEA nations both prioritize economic development. They share concerns for environmental sustainability, although emphasis varies, with both regions recognizing the need for regulation. Additionally, political influence, complex decision-making processes, and opposition from local communities are common challenges in both Western and SEA contexts.

## 6. Conclusion

CLR poses challenges and requires varied approaches across various areas. In Indonesia, the absence of standardized policies and the constraints of politics and budgets hinder the effective implementation of sustainable reclamation practices. In the context of the three case studies in Bali, Jakarta, and Makassar, the significance of land reclamation extends beyond mere economic development. These projects profoundly impact land use functionality, public access to coastal areas, and the preservation of local identity. In Jakarta, a megapolitan city, reclamation is mainly driven by political and economic factors. In Makassar, a metropolitan area with diverse populations, economic considerations are prioritized, but there is uncertainty regarding legal responsibilities. In Bali, cultural and religious factors intertwine with spatial considerations, influencing the discourse on reclamation and its impact on spatial character. In future research, we can improve upon this aspect by conducting a more comprehensive analysis, ranging from the regional scale of SEA to individual countries and then down to the micro-scale of cities. This research has limitations due to its broad scope and could benefit from more detailed exploration in maritime studies, urban governance, law, and quantitative simulation informatics. A more focused approach would offer deeper insights into land reclamation's specific dynamics and impacts.

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## Conflicts of Interest

The authors declare no conflicts of interest.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

## Institutional Review Board Statement

Not applicable.

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