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ASSESSING URBAN RESILIENCE AND LAND USE PLANNING: A SWOT ANALYSIS OF THE DAVAO CITY COMPREHENSIVE LAND USE PLAN (2019-2028)

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ABSTRACT

The onset of urbanization in cities is evident nowadays. This situation, though seen as a driving force for progress, has raised concerns about sustainable development and environmental impacts. As a consequence, the government faces the challenge of providing urban planning policies that aim to balance growth while preventing implementation disparities. Thus, effective urban planning and policymaking must be realized to manage the growing population. This paper aimed to explore and review Davao City's Comprehensive Land Use Plan (CLUP) and its initiatives for urban resilience. The study employed a qualitative desk research design to provide an indepth analysis of the city's land use plans and urban resiliency initiatives. Specifically, the SWOT framework was used to identify the internal and external factors that influence the current CLUP. Findings showed that the CLUP takes climate and disaster risks into consideration upon integrating its necessary land use. However, challenges such as poor information dissemination impede effective implementation and pose additional vulnerabilities to external threats such as urban sprawl and climate change. Still, the CLUP provides an opportunity to address the gaps in implementation challenges and control the city's future development, thus achieving resiliency in urban planning.

Keywords:

Urbanization, Urban planning, Land Use Plan, Urban resilience, Climate risk, Sustainable development, Urban growth management, Resiliency.

INTRODUCTION

Rapid urbanization and exponential population expansion have occurred worldwide in the last 2 decades (Gu, 2019). The United Nations (2018) estimates that by 2050, two to three billion people will reside in cities. While urbanization brings economic opportunities, it also creates serious concerns such as traffic congestion, informal settlements, environmental degradation, and greater exposure to natural hazards. As revealed by Gupta (2017), Asia is home to nineteen of the twenty-five cities worldwide that are highly vulnerable to a one-meter sea-level rise, with seven of them located in the Philippines alone.

Urban areas must reconsider their development strategies in light of the unpredictability of environmental threats like climate change and the growing rate of urbanization (Cramer et al., 2018). To help urban areas bounce back from these risks, Mwenje & Kumar (2024) argue that one important tool for promoting resilience is land use planning. It examines and selects land use solutions to reduce disaster risk by considering natural hazards early on throughout its processes. Specifically, it can direct new developments to appropriate sites, preventing or reducing exposure to natural hazards, hence promoting sustainability and resilience (Saunders & Kilvington, 2016).

The Philippine government institutionalized climate change into national policy-making and planning through the Climate Change Act of 2009 and the Disaster Risk Reduction and Management Act of 2010. Eventually, in 2013,

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supplemental CLUP guidelines urging local government units to include climate change and disaster risk reduction in their plans were issued by the National Climate Change Commission (Chepelianskaia & UNICITI). Davao City, one of the fastest-growing cities in the country, is actively working to strengthen its resilience amid rapid urbanization. This paper aims to review Davao City's CLUP and identify the strength, weakness, opportunity, and threat relative to urbanization and resilience.

OBJECTIVES

The main objective of the study is to explore and review Davao City's CLUP and its initiatives for urban resilience. It also aimed to provide an in-depth analysis of the city's land use plans and urban resiliency initiatives.

METHODOLOGY

This study utilized a qualitative research design principally by means of desk research to analyze existing literatures and data on urban planning and resiliency-all focused on Davao City's 2019-2028 CLUP. This research delves into resilience integration into land use planning by the city's land use plan in the face of rapid urbanization and climate threats. Data analysis through SWOT analysis was done to harness internal strengths and weaknesses and external opportunities and threats affecting formulation and implementation of the CLUP, which encompasses zone classifications, regulations, provisions, and enforcement mechanisms. This method would help in an understanding of how Davao City tries to work with its land use planning to actually be resilient and sustainable.

RESULTS AND DISCUSSION

This section presents the results and discussion of the conducted desk research and evaluation of Davao City's CLUP for 2019-2028. The proponents determine both internal and external factors of the current CLUP, with the aid of relevant planning documents such as the Climate and Disaster Risk Assessment (CDRA). The effectiveness of the CLUP is evaluated by determining its strengths and weaknesses in relation to urban resiliency. On the other hand, future trends and developments are identified through the opportunities and threats. Table 1 below summarizes the key findings in the study:

| STRENGTH | | WEAKNESS |
|-------------|---|--|
| • | Integration of Climate and Disaster Risk Assessment and Risk Overlay Zones in the Zoning Map Addition of Urban Ecological Enhancement Sub-zone Providing zoning incentives for projects that utilize CCA/DRM technology and innovations | Lack of Communications Plan and Education Information Campaign Absence of Implementing Rules and Regulations on zoning incentives Absence of monitoring and evaluation strategy on zoning enforcement and regulation |
| OPPORTUNITY | | THREAT |
| • | Fill the gaps of previous CLUPs and control the city's future development Implement green space and sustainable urban planning Promoting climate-resilient and green infrastructure | Urban sprawl due to the proliferation of illegal structures Unforeseen weather conditions and increasing climate and disaster risk |

 Table 1. SWOT Analysis of Davao City's CLUP (2019-2028)

Strength. Davao City's CLUP (2019-2028) shows a progressive approach to make the city more sustainable, livable, and resilient. One of its key features is how it uses climate and disaster risk data to guide land use decisions through the integration of Climate and Disaster Risk Assessment (CDRA) and showing hazard-prone areas on the zoning map, as shown in the figure below:

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Figure 1. Risk Overlay Zones

The city is able to identify which areas are exposed to climate and disaster risks, including flooding, landslides, liquefaction, active faults, and storm surge by overlaying risk data onto the base zones (residential, commercial, industrial, etc.). Through this, the city can enforce guidelines and regulations to control urban developments in these areas and minimize risks to life and property.

Another remarkable feature of the plan is the addition of the Urban Ecological Enhancement Sub-zone (UEESZ), which is unique to Davao City. This refers to certain areas that are planned for a large-scale greening program as a proactive measure to adapt to climate change and form part of the risk reduction management against flooding, landslides, and inundation. This subzone is permanently protected, and any development must adhere exactly to Article XI, Section 63.2 of the Integrated Zoning Ordinance of Davao City (2019-2028).

The city also encourages the private sector to help build a safer and sustainable city. Under Section 14 of the same ordinance states that any development or project that utilizes climate change adaptation or disaster risk reduction management technology may be given incentives through density bonuses, like building height increase.

Weakness. The primary weakness of the Davao City CLUP 2019–2028 is the lack of a formal communications plan and information education campaign. The Davao City Planning and Development Office posted an announcement on its official Facebook page, along with links to the document and the interactive zoning map when the ordinance took effect on July 17, 2023.

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Figure 2. Announcement of Zoning Ordinance Effectivity Date

However, this strategy alone is not sufficient to inform everyone in the city, particularly the most vulnerable population, of the content and goals of the ordinance. Without the availability of a right channel in disseminating information, citizens are left unaware of the zone classification and allowable uses of their property that may result in non-conformity or worse, illegal structures and operations.

The absence of Implementing Rules and Regulations on the application of zoning incentives is another issue. Although Section 14 of the ordinance provides various incentives to encourage specific kinds of development, monitoring whether or not developers are truly fulfilling the requirements associated with those benefits remains unclear. Moreover, there have been no concrete guidelines defining the extent of the incentives provided.

The ordinance also does not present a monitoring and evaluation strategy on zoning enforcement and regulation, which may hinder the implementation of its provisions. Absence of such a mechanism will result in difficulty measuring its progress and gaps, inconsistencies in its application, and delays in its amendment.

Opportunity. The CLUP allows the city to fill gaps in previous CLUPS while also controlling the direction of the city's future growth by delineating lands for specified use and ensuring that they are utilized for their intended purpose. In line with the city's effort to decongest the central business district (CBD), they use a multi-nodal approach to development. It includes an institutional zone (in color blue) as the focal point of development in a barangay, followed by a commercial zone (in color red), and a residential zone (in color yellow). As a result, each barangay begins to have its own center, making it easier to access goods and services in their immediate areas without traveling to the CBD.

This localized, multi-nodal approach aligns with JICA's Development Framework for Davao City 2045 under the Infrastructure Modernization for Davao City (IM4Davao), which supports the importance of balancing urban growth while preserving the environmentally sensitive zones. For instance, urban hubs like Bunawan, Buhangin, Agdao, Poblacion, and Talomo are identified for strengthening their development in commercial, logistics, and

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tourism, while outlying districts remain primarily agricultural (JICA, 2018). By redistributing social and economic activities across barangays, the city fosters more inclusive development and reduces the burden on the urban core.



Figure 3 Multi-nodal Approach

Furthermore, the City aims to create a network of green and open spaces to reduce the rise of urban heat islands. Section 33 of the ordinance requires the provision of planting strips along internal roads for all residential, commercial, industrial, and mixed-use subdivisions. It mandates all developers to allocate 15% and 10% of the total land area for non-residential and residential subdivisions, respectively, in addition to the aforesaid amenities already required by PD 1216, PD 953, PD 957, and BP 220.

The ordinance also promotes climate-resilient and green infrastructure. No development will be permitted without the integration of green architecture components, including but not limited to the installation of a rainwater harvesting system, permeable pavements, and a three-chamber watertight septic vault, among others. This provides an opportunity for the city to gradually incorporate resilient measures into its urban development.

Threat. While the city has opportunities to fill earlier planning gaps and promote sustainable development through climate-resilient infrastructure, it also faces threats that challenge its ability to build a truly resilient urban environment. Urban sprawl remains one of the key threats affecting the city. In fact, JICA (2025) projects that Davao City's population will grow by 60% from 2,058,190 in 2025 to approximately 3,285,400 by 2045. A pressing concern contributing to this sprawl due to the proliferation of illegal structures. As the city continues its development without proper urban planning, this worsens congestion in the urban core, resulting in strain on services and increasing vulnerability and risks to disaster. This opposes the opportunity to create a future-proof and ecologically balanced city.

Another external factor that is inevitable and a threat Davao City encounters is its exposure to climate and vulnerability to disaster risks. Climate change is impacting the world nowadays. Evidently, extreme weather events such as flooding and landslides are occurring. This stresses the need for urban resilience that goes beyond mere prevention and mitigation. Instead, adopting proactive and sustainable strategies should be done, such as improving the city's infrastructure.

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CONCLUSION

Overall, it is commendable how Davao City developed its CLUP by incorporating climate and disaster risks in land use planning. However, challenges such as poor information dissemination impede effective implementation and pose additional vulnerabilities to external threats such as urban sprawl and climate change. While identifying these gaps implies that the city should enhance its planning framework, it is also an opportunity to improve through increased engagement and communication strategies. Ultimately, improving education, awareness campaigns, and stakeholder collaboration will help strengthen Davao City in building a truly resilient and sustainable urban environment. All these efforts will ensure that the city will have more inclusive, informed, and effective urban planning.

Ultimately, this paper showed the important role of local governments in advancing urban resilience, specifically through strategic land use planning. The integration of resilience measures into local plans can significantly enhance the cities' ability to withstand the consequences brought by rapid urbanization.

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