Implementation Performances of Green Open Space Policy in Makassar City, Indonesia

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Abstract: Makassar as one of Indonesia's largest cities, has seen a variety of environmental repercussions as a result of its rapid urbanization and population increase. The management of green open space is part of the city government's objective for a sustainable city vision. The policy implementation was delayed, according to an earlier study, by issues of facilities, infrastructure, and budgeting. It is necessary to do additional studies using different methods to measure implementation performance more precisely. Within three months, primary and secondary data were collected for a mixed methodology approach that focused on the administrative and technological viability of a policy while employing effectiveness, efficiency, adequacy, and equality as research criteria. The percentage had increased to 3.52% during the last two years as a result of the budget increase, and there were now seven different types of GOS totaling 1,461 hectares located unevenly among 14 districts, where the distribution priority was not primarily based on population density as the main indicator. Performance throughout implementation was efficient and effective. Law, regulation, and guidelines that were thorough and clear, the involvement of the private sector, good coordination of implementer agencies, collaborative deliberation, the use of integrated licensing technology, and corporate social responsibility were noteworthy factors supporting performance. The performance in terms of adequacy and equality required additional improvement, necessitating more focus on low responsiveness, low budgeting, bad facilities, accuracy in prioritizing distribution, land conversion, and land price.

Keywords: adequacy, effective, efficient, equalization, implementation performance

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1. Introductions

Environmental problems are the main problem faced by various countries including Indonesia, (Apresian and Dewi 2018; Gumilang, Mukhopadhyay, and Thomassin 2011; Hani et al. 2012; Sudarmadi et al. 2001), especially in the city areas such as water, soil, and air pollution (Gaborit 2022; Prăvălie 2021), with increasing natural disasters frequencies such as floods, earthquakes, tsunamis, tornadoes, extreme climates, and droughts (Field et al. 2012; Gad-el-Hak 2008; Keller and DeVecchio 2015; Paul 2011; Smith 2013), it is undeniably vital to create a more sustainable city. Green open space (GOS) is an area that extends in the form of pathways or areas that are grouped (Davtalab et al. 2020; Khotdee, Singhirunnusorn, and Sahachaisaeree 2012; Wang et al. 2019; Xue, Gou, and Lau 2017). GOS is one of the components which availability both in quality and quantity must always be taken into account in the urban planning process. According to (Do et al. 2019; Grose 2009; Ives et al. 2017; De Sousa 2003; Tsantopoulos et al. 2018). GOS is part of the open space of an urban area that is grown with the local and introduced plants that provide both aesthetic benefits and support the direct and indirect benefits generated by environment.

GOS is created to offer advantages that are vital to long-term health and well-being and the sustainability of a city. According to (Cobbinah et al.

2021; Gilbert et al. 2013; Kim 2014; Sadick, Kpamma, and Agyefi-Mensah 2020; Shahzad et al. 2022), GOS can enhance comfort, welfare, improve environmental quality, and preserve nature, serve several purposes including enhancing the quality and serving as urban environmental protected areas; and fostering harmony between the built and natural environments that is advantageous for achieving the goals of sustainable community life.

Moreover, GOS acts as a pollution absorber and temperature regulator, poor air quality, lethal heat, and other climate change-related problems. GOS has grown to play a significant role in a city's development towards a more natural setting as well as essential to a city's survival and serves a social and psychological purpose for its residents (Chiesura, 2004; Chiang & Tan, 2009; Villanueva et al, 2015).

One of the mayor cities in Indonesia's homeland is Makassar, the capital city of South Sulawesi province which has quite a lot of potential. The number of GOS in this city is considerably less than the ideal proportion standard, often regarded has no economic value, and has decreased over time in line with the development dynamic of the city (Amin, 2019). Various policies and regulations have been implemented (Hupe and Buffat 2014; Manning 2001; Milakovich and Gordon 2013; Urwin and Jordan 2008), but there are still many programs that are not implemented properly (Burstein 2003; Heinrich 2007), as the GOS in the city of Makassar. The have been several laws implemented as a minimum safeguard for preserving environmental harmony. However, Setiowati et al. (2018) reported that the city only has 1,460.65 ha GOS or less than 10 % consisting of parks, green lines, cemeteries, and city forests. The area in hectares is substantially smaller than the seven major cities in Indonesia, as well as compared to other major Asian cities like Singapore, Kuala Lumpur, Seoul, Tokyo, and Hong Kong.

The government policy must be related to an action plan directed at realizing certain goals as GOS development, which provide direction, coherence, and continuity, focusing on the selection of goals, and the means to achieve the desired sustainable city goals (Gratton and Truss 2003; Paarlberg and Lavigna 2010; Shane 2010; Weisburd et al. 2003). The aforementioned phenomenon indicates that there are some obstacles remaining for policies taken by the government to achieve broader goals in sustainable cities that affect the lives of citizens, although resources, laws, regulations, and guidance are in place.

According to earlier research, implementation was hampered by bureaucracy, facilities, infrastructure, and technology, as well as budgeting requirements (Nur, 2022) but a clear picture of the amount of progress attained is not acquired because the discussion's main objective is to identify the criteria that have prevented implementation with a purely qualitative approach. Therefore, additional research with a different approach is required to acquire more precise performance measurements of the government's attempts to implement the GOS policy in Makassar.

2. Methods

A mixed method research was used to conduct the study from October to December 2022 in the Spatial Planning Agency and the Environment Protection Agency offices of Makassar. The method is chosen because the research uses different sources and methods at various points in the evaluation process, where the research team can build on the strength of each type of data collection and minimize the weaknesses of any single approach. A mixed-method approach to evaluation can increase both the validity and reliability of data. Experienced evaluators have found that most often the best results are achieved through the use of mixed method evaluations, which combine quantitative and qualitative techniques (Frechtling et al., 1997).

Effectiveness, efficiency, adequacy, and equality were used as assessment criteria for GOS policy performance based on Dunn (2003). The analysis approach developed by Nur (2010) and Patton et al. (2016) was used to focus the implementation performance analysis for each criterion, paying

special attention to the policy's administrative and technological feasibility aspects. While the administrative operability aspect evaluates the practicality of putting the GOS policy into reality in the contexts of politics, society, and, most importantly, administration, the technical viability aspect evaluates the effectiveness of GOS policy outcomes. The methodology used in this study was an evaluation that employs descriptive techniques to generate accurate and reliable data about program outcomes by the policy that had been formally announced by policymakers and program administrators. As one of the appropriate ways to measure the value or benefits of program policies by formally stating goals and objectives. Determining the success value of a program, product, procedure, and goal can be useful as a potential for designing alternative approaches in solving problems. The aims and objectives of this policy evaluation are based on statutory regulations, program documents, and the results of interviews with policy makers and organizers. The data used includes primary data in the form of informants' words, actions, and several events related to the research topic, as well as secondary data obtained indirectly. Direct interviews with officers at various levels, as well as observations were carried out at related agencies by opening documents to collect primary data. Interview guidelines, observation guidelines, and documentation were used as research instruments. Through data source triangulation, data suitability is checked to test validity through the convergence of information from different data sources (Carter et al., 2014). Member checking or respondent validation is a technique for exploring the credibility of results. Member checking involves comparing collected data with valid analysis. Data or results were returned to participants to check for accuracy and resonance with their experiences (Birt et al., 2016). Following data collection, the data was analyzed in four stages: data organization, data condensation or reduction, data display or presentation, and verification to ensure the validity of the analysis's findings before drawing any inferences (Frechtling et al., 1997).

3. Findings and Discussions

The Indonesian government has been gradually realizing for years that increasing GOS in cities is a way to make those cities more sustainable, habitable, and equal. The government has enacted State Law Number 32 of 2009 concerning environmental protection and management, which generally regulates the unity of space with all things, the continuation of life, human welfare, and coexistence with other living things, including urban GOS to ensure oxygen circulation, pollutant absorption, and urban aesthetic. The government has declared Law Number 26 of 2007 concerning spatial plan oblige that urban areas have to provide at least 30% of their land as GOS.

3.1. GOS Policy Effectiveness

Since the implementation is the most crucial component of a policy, evaluating it is also of utmost importance to ascertain the variation of outcomes on specific independent variables, the factors that influence these variations, and improvement strategies for policy implementation performance. An unbiased evaluation of the implementation will stimulate original ideas and change proposals during the subsequent cycle of policy improvement (Nugroho, 2009). Augustino (2020) mentioned there are some purposes for evaluating policies, the evaluation of pricing and usage, namely the creation that ensures program choices at the individual and community levels, and the categorization of topics, namely the techniques used to categorize and examine the fundamental structure, the causality analysis, namely the investigation to test causality linkages or to look at the mechanisms by which effects are brought about, and the value exploration namely the evaluation of natural processes, exploring or examining value positions.

A rather extensive collection of regulations beginning at the levels of the national, provincial, and municipal governments make it mandatory to adopt the GOS plan. However, the degree of its execution's effectiveness will vary depending on several specific factors with different conditions and resources. The

coastal city of Makassar, which has a tropical climate and a population of 1.5 million, is rapidly urbanizing and has become a major metropolis in the previous 25 years. The current Makassar government is making several efforts to prepare for various environmental effects that result from development activities and rapid population growth, including developing a vision for developing livable cities through smart city policies, one of which includes a smart environment program that covers the plan for GOS development and management.

The technical executors of this initiative were the environmental agency and the spatial planning agency, which from 2016 to 2022 developed and administered a growing share of GOS in the city, precisely from 7.58% to 11 %. Even if the percentage increase at the time was only 3.42% or 0.49% each year on average, the overall trend indicated positive growth.

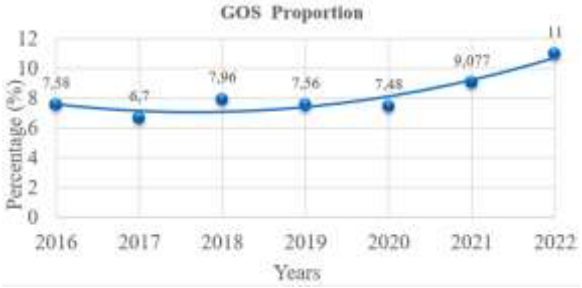

Figure 1. Proportions of GOS in the year 2016-2022

The spatial planning agency and the environmental agency had provided a technical plan document for every level of government administration, promote the building of public facilities and GOS in areas owned by the private sector, and exert control over the granting of permits for the use of GOS through monitoring and evaluation at any time. The spatial plan agency had also implemented the technical measure of City Major Instruction No. 69 of 2016 regarding guidelines for the arrangement of GOS, which specifies that every district, subdistrict, community, and neighborhood must have GOS and that the requirement for it is arranged based on the level of population density. Guidelines can assist policymakers in conducting policy evaluation successfully. They intend to assist all those participating in the implementation of a policy in better planning, commissioning, and managing its evaluation (Austrian Development Cooperation, 2009).

Given that the majority of the time, the inclusion of GOS in planning legislation is either ignored or done so in a subpar manner in developing countries (Shamima, 2017), the fact that there was a positive growth in GOS proportion indicated that there had been a planned and effective implementation pattern for GOS development in Makassar. Whether an option achieves the expected outcome or the policy's intended goal is the basis for measuring the implementation effectiveness (Dunn, 2003). Other notable characteristics included the involvement of the private sector, the clear definition of each agency's authority, and the well-organized web-based licensing mechanism, all of which contributed to the good growth. (Patton et al, 2016) stated that the authority to implement a policy, to turn it into a program, is often a critical criterion. The need of creating policies that link actors both vertically and horizontally in a process of collaboration and collaborative deliberation is strongly stressed by Nur, (2000) and Ansell et al., (2017). Failure to establish a common platform for public problem-solving via constructive management is one of the primary implementation issues. In addition to the involvement of local actors like end-users, frontline staff, and a variety of local service agencies, designing and implementing policies requires ongoing collaboration with a variety of stakeholders at various levels of politics, policymaking, management, and administration (Hudson et al., 2019). According to Acemoglu et al., (2012), the success of a country to develop and develop is not due to the ownership of rich natural resources, technological sophistication, a supportive climate, or other things, but because of institutional management by political elites as decision makers.

However, the GOS proportion target of 30% in the year 2034 could be viewed as overly optimistic when compared to the average annual growth rate of 0.502%. At this rate, the proportion will increase by roughly 5% in 2034. According to Hudson et al. (2019), it is well-accepted that the time, expenses, and risks involved in implementing a policy are frequently underestimated while the advantages are frequently overestimated. Since Dunn (2003) cautions that sometimes it takes time for a policy to deliver benefits that are favorable in the long run, it will take more years to reach the desired policy targets. An important dimension of effectiveness criteria is whether the policy effects are short-term or long-term. A long-term impact is experienced at a time in the future and thus requires discounting to value accurately (Patton et al., 2016).

3.2. GOS Policy Efficiency

The City Regulation Number 4 of 2015 regarding Regional Spatial Plan 2015 - 2034 defines GOS into two categories: public GOS and non-green public GOS. Public green open spaces refer to particular areas with vegetation that are government owned and managed, such as natural conservation areas or regions along riverbanks. Promenades, plazas, squares, and blue open spaces such as coastal and river zones, are all included under the category of non-green public open space.

Figure 2. GOS budget allocation in the year 2018-2023

Based on the regulations, the city government then translates it into a medium-term development covering the list of priority programs as a five-year planning period, where the current GOS management is included in a called smart environment program. Every year the program is translated participatively into activities through the city regulation of the Makassar City Development and Expenditure Budgeting Plan.

In 2018 the government budgeted 2.11 billion Rupiahs and increased sharply to 55.9 billion Rupiahs in 2022. In 2023 plans to increase the budget to Rp. 69.6 billion Rupiahs. This increase in the value of budgeting showed that there was already political will from all stakeholders to support the GOS policy. However, the trend of increasing the budget was not immediately capable of causing an increase in the proportion of GOS growth, because the value was not as large as needed. A far larger amount of money was set aside for GOS maintenance. Fortunately, corporate social responsibility had become another source of funding for the government's GOS maintenance program. Only 1.24% of the overall budget was allotted to GOS in Makassar in 2022, which was roughly equal to the percentage of 1.78% provided by the government of Jakarta, the capital of the nation.

Taking into account the ecological, socio-economic, public health, and recreational values functions of GOS, the city government continued to work toward increasing the budget for GOS every year. The effort could increase the area proportion for GOS development including for performing maintenance by an average of 0.502% within the last seven years. Following the increase in budget allocation over the past two years, the proportion of GOS had climbed dramatically reaching 3.52%, a significantly greater percentage than the average. Therefore, it can be claimed that the GOS policy had been implemented fairly efficiently, and according to Dunn's (2003) definition, efficiency is a measurement of how diligently a policy activity is being carried out to achieve the best results consistent with the objectives.

Given the rate of land conversion in this metropolis, the current low growth of GOS must be further boosted. In Makassar City, the total amount of open land was twice as large as the total area of built-

up regions in 1994, with 11,570 ha and 3,791 ha, respectively. In 2001, there were 6,478 ha more built-up areas, and this increased to 9,839 ha in 2015. The built-up area is expected to increase to 11,600 ha in 2031 as a result of this tendency continuing to rise (Niles, 2020).

Higher disposition from the government was needed to allocate more budget to sustainable city-related activities. Disposition is the willingness, desire, and attitude tendency of the government to carry out seriously so that what is the goal can be realized. High dispositions will affect the success rate of policy implementation (Hill & Hupe, 2002). The widespread and profound acceptance of policy standards and objectives among those who are responsible for implementing such policies is of great potential for successful policy implementation. In the end, the disposition intensity can affect policy performance policy implementation (Kahan & Braman, 2006). Organizational support is also an important criterion because it is not sufficient to have only the authority to implement a policy and the commitment of key personnel. It is also necessary to have sufficient equipment, physical facilities, and other support services (Patton et al., 2016).

Merk et al., (2012) reported that in 2010 between 10% and 45% of all urban spending in OECD countries was concentrated in potential going green activities. To green these activities, cities had a fair amount of leeway, in Montreal and Toronto they account for 44% of all current and capital expenditures. Considering the extremely complicated urban situations, the government's financing for GOS needs to be managed more intelligently. There were still a lot of issues with defects and barriers in the field, particularly about the lack of an acquisition budget for land that had been formally recognized as suitable for GOS. Novel solutions were required to significantly alter this circumstance. The budget issue lowered the GOS priority scale compared to other public needs that were thought to be the most vital for society. Coordinating efforts between relevant agencies and maximizing engagement from the public and private sectors were crucial.

Additionally, many initiatives have succeeded in industrialized nations, as suggested by Merk et al. (2012), who contend that split-rate property taxes, variable parking fees, toll lanes, and congestion charges, carbon finance, polluter pay principles are only a few examples of municipal financial instruments that should be greened. Public sector financing might not, however, be sufficient to encourage a paradigm shift. The second critical stage is to mobilize private sector investments to bridge budgetary gaps for various urban green infrastructure projects.

3.3. GOS Policy Adequacy

According to the Regional Spatial Plan 2009–2029 and Southeast Sulawesi Government Regulation Number 9 of 2009 governing environmental management, all cities and regencies in the province must dedicate at least 30% of their total acreage to GOS by the year 2029. The Makassar government has established guidelines for the provision and usage of GOS in urban areas through City Government Regulation No. 3 of 2014 about the arrangement and administration of GOS, referring to the national and provincial regulations. A large-scale GOS, such as urban forests and airport security zones, a medium-scale GOS, such as parks, sporting arenas, and public cemeteries, and a small-scale GOS, such as open space that is provided as playgrounds, parks, and sports fields in each residential neighborhood, are all covered by the standards outlined in this regulation. The 1,461 ha of existing GOS in the city are made up of cemeteries, mangroves, gardens, fields, green belts, and city forests, with cemeteries and green corridors making up the largest types with 558,93 ha and 274,07 ha, respectively.

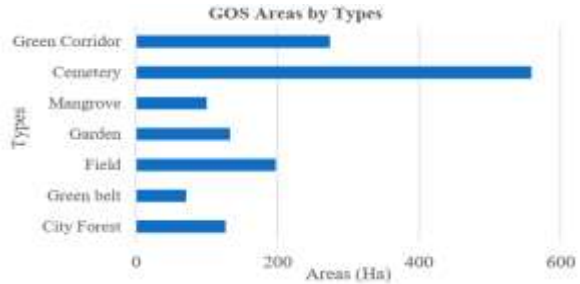

Figure 3. GOS areas by types in 2022

The existence of GOS as public facilities, which provide a variety of roles essential to urban life, might also meet a range of demands for areas where people can engage socially, as well as for sporting and recreational amenities. GOS was a space owned and managed by the local government and was available to the general public for use. It could take the shape of city parks, urban woods, greenways, spaces next to rivers, cemeteries, etc. Private GOS, often known as gardens or yards, was green space that belongs to certain people or organizations and is primarily used for their purposes. Public and private buildings landscaped with lovely plants were considered to also be private GOS.

Adequacy is the degree to which an effectiveness level satisfies the needs, values, or opportunities that give rise to issues. This criterion highlights the close connection between potential policy options and desired results (Lucita, et al., 2022). In response to a range of community expectations, such as the need for clean air, children's playgrounds, sports, outreach, community meetings, city beauty, disaster protection, and the demand for burial places, this city developed seven different types of GOS, the GOS facilities were accessible yet constrained. To better respond to the demands of metropolitan neighborhoods, the GOS management needed modern facilities based on their types and intended uses. According to Mandeli (2019), errors in the type determination and design can result in a variety of issues, including abandoned GOS, thus it is important to consider the variety of people's expectations. The spatial plan agency supervisor discovered that a lack of knowledge about the types and values of GOS was to blame for people's careless behavior. Some people destroyed plants, fences, and rubbish because they don't recognize them as being a part of the specified GOS.

This also relates to policy responsiveness in terms of how much GOS policy could accommodate different social groups' demands, preferences, or values. A policy's effectiveness can be judged by how the public reacts to its implementation after forecasting the effects that will result. The community's response can be positive or negative depending on whether the policy has already had an impact on the area (Dunn, 2003). The implementation of policy carried out by institutions with systematic organization, coordination, flexible discretion, and mutual synergy among them will drive positive results (Acemoglu et al., 2012).

Adequacy measures how far toward a solution we can proceed with the resources available. Even an effective program may fall short of its objectives or solve only part of a larger problem (Patton et al., 2016). Better coordination was needed to ensure that the GOS policy adequately addresses the larger needs of a multi-faceted society. Coordination of planning and implementation was necessary because each type of GOS above usually had a different agency proposing the budget and managing it, for example, the mangrove type was under the authority of the fisheries agency, and the field type was under the youth and sports agency. Coordination failure would cause problems in policy implementation, as Shamima (2017) states that the difficulty for multilevel planning bodies to coordinate causes GOS that are already in place to become dysfunctional.

3.4. GOS Policy Equalization

Consideration of whether the suggested alternative resulted in a more equal or equitable distribution of the environmental risks that exist in each district serves as an equity criterion for choosing the distribution of GOS to serve as a recommendation. The government was in charge of making sure that its residents live in healthy urban environments. The distribution of GOS in urban areas must be equitable by several technical norms, including population density, as doing so would lower the risk of consequences that residents might experience as a result of unhealthful environmental circumstances. Dunn (2003) stated that the equity criterion for evaluating several policies to serve as a recommendation is based on considering whether the recommended alternative results in a more equitable or equitable distribution of the risks that exist in society.

The creation of a balanced number of GOS must go hand in hand with population growth. Kecamatan Parks and Kelurahan Parks needed to be constructed in each district and sub-district following the Minister of Public Works' regulation No.05/PRT/M/2008. A garden of 9,000 m^2 was needed for a subdistrict with a population of 30,000 people or 0.3 m^2 of garden space per person. A minimum area requirement/capita of 0.^{2} m2 was needed for a district with a population of 120,000 persons, or 24,000 m^2 garden spaces.

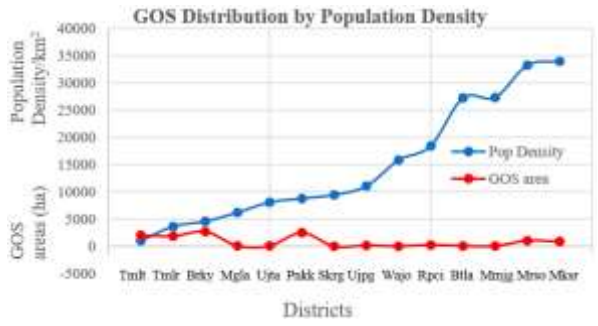

Figure 4. Distribution of GOS areas by population densities in 2022

The distribution of GOS by districts was not developed evenly and was arranged not by a single population density consideration. Makassar, Mariso, Mamajang, and Bontoala are the four districts with the greatest population density, with a range of 27,312-33,935 people/km^2. The districts ought to contain a higher GOS proportion based on the population density. The districts' imbalanced GOS proportion, which ranges from 63 to 1040 Ha, represented the actual situation. The districts with the higher proportion of GOS included Tamalate, Biringkanaya, Panakkukang, and Tamalanrea, which range in size from 188.6 to 269.1 Ha. The distribution of government expenses and advantages by residential location, income class, race and ethnicity, age, gender, family status, ownership status, and current vs future generations is identified by Patton et al. (2016) as the most typical indication of fairness.

Although the population were not the densest, the head of the environmental agency noted that in addition to taking population density into account, other factors include the service, industrial, residential, and educational centers with very dense levels of transportation. This was a top priority for GOS development since air monitoring findings suggested that the four districts' daily average temperatures were relatively higher. The distribution of outcomes and efforts among various social groups is referred to as equality and is intimately tied to legal and social rationality (Lucita et al., 2023). Additionally, the high rate of land conversion for the needs of various buildings and increased land costs were issues that frequently arise for GOS growth in highly populated places.

Due to financial limitations, it necessitates the capacity to choose wisely based on the data and information at hand. Accuracy was required, specifically the feasibility used to choose a recommended alternative, which was a choice of goals considered feasible. The eligibility criteria are connected through substantive rationality because they relate to the substance of the goal rather than the methods or tools used to achieve the goal (Dunn, 2003). Other districts were not being disregarded in this instance; rather, a slower pace would be used to strike a balance between extending the GOS area and maintaining the current level of population density.

The emphasis of equality was on how the expenses and benefits of the policy are shared by the relevant groups. Fairness is the idea of a distribution that takes into account the necessity for a program or service, as opposed to just an equal distribution. There are moral and ethical questions involved in defining fairness, and there isn't always a simple solution (Patton et al., 2016). However, given the significant difference in the proportion of GOS between the districts and referred to major regulation, the issue of GOS equality had to receive more attention. After all, city dwellers needed better and more environmentally friendly living circumstances. In connection with this, the GOS policy's performance according to this criterion was seen as subpar.

4. Conclusions

The performance of GOS policy implementation was effective. The city's GOS proportion increased annually by 0.502%, suggesting positive growth. However, a careful examination was required of the 30% target in 2034. Each level of government working together, the implementers having a clear sense of authority, the inclusion of the private sector, and the use of web-based technology for licensing procedures were all factors that encourage effectiveness. The performance of the implementation was also effective. The proportion of GOS had substantially increased to 3.52% following the increase in budget allocation over the previous two years, a significantly higher percentage than the average. The political resolve to boost the budget, business social responsibility for maintenance, organizational support, and coordination were the factors that supported the effectiveness. Need to pay particular emphasis on better disposition, innovative finance methods, and boosting the involvement of the private sector.

The performance of the implementation was merely adequate. Cemeteries, mangroves, gardens, fields, green belts, and city woods made up the 1,461 hectares of existing GOS in the city, which met various requirements, values, and opportunities for citizens. Facilities could be accessed, and planning and implementation processes were well coordinated. Infrastructure must be modernized, tailored to the needs of the neighborhood, and made aware of those who act irresponsibly. Low equality performance was achieved in the implementation of the policy. The presence of service, industrial, residential, and educational centers was regarded as more important than population density as the primary indicator. Scientific evidence for selecting an accurate distribution priority, the high pace of land conversion, and land price were the issues that require more work.

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