Analysis of Public Policy in Malang City Through Measurement of Environmental Pillar SDGs Indicators in the Perspective of Public Budgeting Allocation

Asfa Agustina Nusba Aini[1], Farida Rahmawati[2], Hadi Sumarsono[3]
[1,2,3]Faculty of Economics and Business, Universitas Negeri Malang, Indonesia
Corresponding Author: asfa.augustd13@gmail.com.

ABSTRACT

In the achievement of the Sustainable Development Goals, the efficient disbursement of allocated budgets is critical. Budgets are recognized as one of the most powerful tools available to administrations to encourage contributions, and therefore several initiatives have emerged to align budget items and Sustainable Development Goal performance. This research aims to know the effectiveness and efficiency of the implementation of the environmental pillar SDGs in Malang City and analyze budgeting allocation policies that are more effective efficient and sustainable for the implementation of environmental pillar SDGs indicators in Malang City. The result is the level of effectiveness of the implementation of the environmental pillar SDGs in Malang City occurred in 2022, while the efficiency of the implementation of the environmental pillar SDGs in Malang City also occurred in 2022 with an efficiency value of 15.04 percent. The best effectiveness achievement in 2022 was supported by goal 6: clean water and proper sanitation, goal 11: sustainable cities and settlements and goal 13: addressing climate change with a total of 23 indicators. The best efficiency in 2022 is supported by the number of efficiency numbers in goal 6: clean water and proper sanitation, goal 12: responsible consumption and production, and goal 15 terrestrial ecosystems. As for budgeting allocation that is more effective efficient and sustainable for the implementation of environmental pillar SDG indicators in Malang City, it can make 2022 the basic reference year. Especially in matters of program/activity implementation to achieve the goals of the environmental pillar SDGs.

Keywords:
SDGs, budgeting allocation, effectiveness, efficiency

INTRODUCTION

The Sustainable Development Goals are a global agreement on sustainable development based on human rights and principles of equality. The 2030 Agenda for Sustainable Development was adopted by the United Nations General Assembly in 2015 and includes 17 global goals aimed at peace and prosperity (Johnston, 2016). The SDGs have 169 specific targets, each with measurement indicators. The most widely used thinking by many parties is that sustainable development carries three dimensions, namely the economic dimension, social dimension, and environmental dimension (Fauzi & Oxtavianus, 2014).

In reducing environmental pollution and improving sustainability, the state needs to increase the amount of budget on programs that support these goals. Efficient distribution of allocated budgets is essential to meet these goals. The government also needs to socialize the philosophy of sustainability to the public. In addition, the philosophy of sustainability needs to be included in formal academic education so that students and the public are educated about responsible and sustainable consumption. Human resource development also needs to be done outside of formal academic education. And finally, there needs to be appropriate and sustainability-oriented laws and regulations that refer to people's daily behavior and activities (Shao et al., 2022).

It is estimated that there will still be development gaps that will remain open in 2030 within individual countries as well as across indicators. Most government spending is insufficient to close the SDGs gap, even if countries operate budget caps to meet existing government programs. Micro-policies are therefore needed to overcome long-term bottlenecks. And to improve relevant indicators (Guerrero & Castañeda, 2022).

From around 2000, public sector governance shifted from output-focused strategies to more outcome-focused strategies to align citizen expectations and services received. This idea led the Public Administration to adopt participatory governance strategies. Citizen involvement is therefore fundamental, especially in the budgeting process. To be precise, Participatory Budgeting involves citizens in the life of Public Administration, aligning citizen expectations with effective policy implementation (Mattei et al., 2022). The ongoing global pandemic is having a devastating impact on economies and public health, and governments around the world are having to make tough budget decisions to deal with the problem. (Participatory budgeting can be a valuable tool for public officials to address this (Bartocci et al., 2022).

Budgets are recognized as one of the most powerful tools available to administrations to drive these contributions, and therefore several initiatives have emerged to align budget items and Sustainable Development Goal (SDG) performance. (Sisto et al., 2020). Sisto in his research analyzes the impact of public policies on sustainable development goals through budget allocations and Sustainable Development Goals indicators. The research is a case study in Spain. This research aims to establish evidence-based foundations and supporting tools for more efficient and sustainable policy design.

Malang City still uses Local Owned Tax (PAD) funds in handling greenhouse gas emission issues and has not implemented a special allocation or earmarking of one type of tax that has been authorized in the Regional Tax and Regional Contribution Law (Almaghfi et al., 2016). To achieve the SDGs, the Malang City government has made various policy efforts and regional innovations, including supporting the universal access to sanitation movement through the 100-0- program (Akbar, 2018). One of the supporting programs is Kota Tanpa Kumuh (KOTAKU) in Malang City, which is 100 for access to clean water 0 slums, and 100 for access to proper sanitation. KOTAKU aims to improve access to infrastructure and basic services in urban slums to realize a livable, productive, and sustainable settlement (Harjo et al., 2021). In addition, there is a thematic village movement, where research shows that the influence of thematic village development in efforts to overcome urban development problems in Malang City has a very positive impact on handling the development of the Malang City area (Akbar, 2018). Urban villages are a strategic potential and unique settlement model that needs to be managed properly, equal to other settlements as well as part of the development of the nation and state, one of which is sustainable tourism (Purbadi & Lake, 2019). And the Regional Action Plan (RAD) Sustainable Development Goals (SDGs) prepared by the Regional Development Planning Agency of Malang City.

RAD SDGs Malang City 2019-2023 have been monitored and evaluated 2 (two) times, namely in 2021 and 2022. The results of monitoring and evaluation in 2021 showed that there were 9 goals whose indicators still received a C grade, where a C grade is the lowest category given in the monitoring process. Meanwhile, the results of monitoring and evaluation in 2022 showed that 31 indicators were not achieved because the realization did not meet the set target. As many as 209 indicator data did not have an initial target unit when the Malang City SDGs RAD 2019-2023 was compiled. The low achievement of several SDG goals is influenced, among others, by regulatory policies that have not supported and budgeting policies in the

implementation of achieving SDGs. Based on this phenomenon, this research wants to analyze public policy in Malang City by measuring SDG indicators from the perspective of public budgeting allocation with problem limits on the environmental pillar sustainable development goals in Malang City.

The detailed research objectives are as follows:
1. To measure the level of effectiveness of the implementation of the environmental pillar of the SDGs in Malang City;
2. To measure the efficiency of the implementation of the environmental pillar of the SDGs in Malang City;
3. To analyze budgeting allocation policies that are more effective efficient and sustainable for the implementation of environmental pillar SDGs indicators in Malang City.

METHODS

The data collection method used in this research is secondary data collection.
Data Component:
- Realization and achievement of the program;
- Program budget realization and achievements.
Secondary Data Type:
- Medium Term Development Plan (RPJMD) of Malang City Year 2018-2023;
- Amendment to the Medium-Term Development Plan (P-RPJMD) 2018-2023;
- Strategic Plan (Renstra) of Regional Apparatus;
- Government Agency Performance Accountability Report (LAKIP);
- Budget Realization Report (LRA);
- Evaluation and Monitoring of Program Achievements.
Data Source:
- Development Planning Agency (BAPPEDA);
- Regional Finance and Asset Agency (BKAD);
- Environment Agency (DLH);
- PUPRPKP Office;
- Regional Disaster Management Agency (BPBD);
- Civil Service Police Unit (Satpol PP);
- Transportation Agency (Dishub).

The data needed is limited to budget data for the achievement of the Environmental Pillar which in the Malang City SDGs refers to goal 6: clean water and proper sanitation which has 4 indicators in its implementation in Malang City planning, goal 11: sustainable cities and settlements that have 18 indicators in its implementation in Malang City planning, goal 12: responsible consumption and production which has 4 indicators in its implementation in Malang City planning, goal 13: climate change management which has 1 indicator in its implementation in Malang City planning, and goal 15: terrestrial ecosystems which has 1 indicator in its implementation in Malang City planning.

Descriptive Statistical Analysis

Descriptive statistics include ways of collecting, summarizing, and presenting data so that information will be obtained that is easy to understand (Muchson, 2017). Descriptive statistics can provide information about measures of data concentration, measures of data distribution, the tendency of a cluster, and measures of location. It should be understood that descriptive statistics only provide information about the data they have and in no way draw any conclusions or inferences about their larger parent data groups. The preparation of tables, diagrams, graphs, and other quantities is included in the category of descriptive statistics (Walpole, 1995). In this research,

descriptive analysis is used to describe/explain in more depth the targets and achievements of program indicators as well as budgets that support sustainable development in the environmental development pillar.

Analysis of Program Outcomes

In analyzing the achievements of programs that support the sustainable development of environmental development pillars, descriptive evaluative techniques are used. Descriptive analysis is a technique that serves to describe or provide an overview of the object under study through the data that has been collected related to the development of the target achievements of economic development program indicators. Evaluation is a systematic process of collecting, analyzing, and interpreting information that is generally obtained through measurement to determine the level of success and efficiency of a program. The evaluation carried out in this study is in the form of comparing the realization results and targets of a program so that it can be seen whether the program is achieved or not. The steps in analyzing the achievements of programs that support sustainable development of environmental development pillars are as follows:

1. Mapping programs, program indicators, and program targets based on SDGs indicators for the environmental development pillar;
2. Identifying the realization of program indicators based on the results of secondary data that has been obtained from each regional apparatus;
3. Analyzing the achievements of economic sector programs with the following formula:
   - Indicators are positive, meaning: if the greater the realization means the better the performance, or vice versa the smaller the realization the worse the performance, then the formula is used   Indicators are positive, meaning: if the greater the realization means the better the performance, or vice versa the smaller the realization the worse the performance, then the formula is used:

$$Achievements = \frac{Realization}{Target} \times 100\%$$

   - Indicators are negative, meaning: if the greater the realization means the worse the performance, or vice versa the smaller the realization means the better the performance, then use the formula: Indicators are negative, meaning: if the greater the realization means the worse the performance, or vice versa the smaller the realization means the better the performance, then use the formula

$$Achievements = \frac{Target - (Realisasi - Target)}{Target} x 100\%$$

   Evaluation of program achievements based on the target and realization of each program indicator.

Effectiveness Level Analysis

Program effectiveness can be formulated as the level of target realization that shows the extent to which the program objectives have been set. It can be understood that effectiveness is a benchmark for comparing the process carried out with the goals and objectives achieved. A program is said to be effective if the effort or action taken is following the expected target. Effectiveness serves as a benchmark for comparing program targets with the results achieved. Evaluation of the effectiveness of program indicator achievements is carried out based on the Regulation of the Minister of Home Affairs of the Republic of Indonesia Number 86 of 2017 concerning Procedures for

Planning, Controlling, and Evaluating Regional Development, Procedures for Evaluating Draft Regional Regulations on Regional Long-Term Development Plans and Medium-Term Development, as well as Procedures for Amending Regional Long-Term Development Plans, Regional Medium-Term Development Plans, and Regional Government Work Plans. The following is the effectiveness of the Malang City indicator measurement program:

Table 1. Performance Realization Assessment Criteria

No.	Performance Realization Assessment Criteria	Performance Realization Value Interval
1.	Very High	91% - 100%
2.	High	76% - 90%
3.	Medium	66% - 75%
4.	Low	51% - 65%
5.	Very low	≤ 50%

Source Regulation of the Minister of Internal Affairs of the Republic of Indonesia Number 86 Year 2017, 2017

In the performance assessment, the gradation of value (intensity scale) of an indicator's performance can be interpreted as follows:
1. Very High and High Results   Very High and High Results
This gradation indicates that the achievement/realization of performance outcomes has met the target and is above the minimum requirements to pass the performance assessment.
2. Medium Result   Medium Result
Medium gradation indicates that the achievement/realization of performance outcomes has met the minimum requirements.
3. Low and Very Low Results   Low and Very Low Results
This gradation indicates that the achievement/realization of performance achievements has not met/is still below the minimum requirements for expected performance achievements.
(Regulation of the Minister of Internal Affairs of the Republic of Indonesia Number 86 Year 2017, 2017).

Efficiency Analysis
- Performance indicators are measuring instruments to determine the achievement of predetermined performance;
- The cost standard is a set unit of cost, which is used for cost analysis to determine the allocation of funds needed to produce a performance; and
- Performance evaluation is a process of measuring or assessing performance achievement, both in terms of performance achievement and the cost of achieving it. The results of performance evaluation are used as one of the components during the budgeting process for the following years.

In this study, the performance evaluation that will be carried out is the measurement and assessment stage of the previous year's budget implementation where the results will be used as the basis for preparing the budget for the following years. This evaluation uses the performance evaluation mechanism stipulated in PMK No. 249/PMK.02/2011 concerning Measurement and Evaluation of Performance on the Implementation of Work Plans and Budgets of State Ministries / Institutions. One of the performance evaluations in PMK No. 249/PMK.02/2011 is by measuring efficiency with the following formula:

$$E = \frac{\sum_{i=1}^{n}\left(1 - \frac{RAK\ ke\ i / RVK\ ke\ i}{PAK\ ke\ i / TVK\ ke\ i}\right)}{n}$$

Description:
E = Efficiency
RAK = Output Budget Realization
RVK = Output Volume Realization
PAK = Output Budget Ceiling
TVK = Output Volume Target

Based on the efficiency formula, a formula for cost per unit of output or Cost Index per output can be developed. If the output cost index has been optimally calculated and set as the Standard Output Cost (SBK), then efficiency can be calculated based on the deviation between the realization of per-output cost and SBK. SBK is the cost required to produce a performance (output) with an optimal value.

The cost index based on output target and realization is formulated as follows:

- $Target\ Cost\ Index (IBT) = \frac{Budget\ Ceiling\ Output\ (PAK)}{Output\ Volume\ Target\ (TVK)}$

- $Realized\ Cost\ Index\ (IBR) = \frac{Budget\ Realization\ Output\ (RAK)}{Output\ Volume\ Realization\ (RVK)}$

By using these instruments and following the objectives of implementing PBK, it is expected to produce standardized costs (budgeting allocation) with efficiency that can be continuously improved (Olfah, 2018).

Policy Analysis
Content Analysis is a method to examine the substance and consistency of a policy, program, and/or certain legal instruments related to a particular problem. In this case, content analysis is focused on analyzing various development policies and strategies contained in various district/city development documents and applicable laws and regulations. The stages of policy review using content analysis are as follows:
  a. Review of literature and policies on research and other multidisciplinary writing The purpose of this stage is to deconstruct existing writing.
  b. Pattern recognition to identify similar patterns from random information. The aim is to classify the concepts in general and then look at the similarity of patterns in more detail.
  c. Identifying the concept of SDGs development in the environmental pillar and exploring the influencing factors.
  d. Conceptualization to identify the influencing factors.

RESULTS AND DISCUSSION
The first thing to do is to conduct a descriptive analysis by finding the value of budget achievements and the value of output achievements. The budget achievement value is calculated by dividing the budget realization by the planned budget ceiling multiplied by 100 percent. Meanwhile, the output achievement is calculated by dividing the output realization by the target set multiplied by 100 percent. Next is to analyze the level of effectiveness of each of these achievement values.
Effectiveness Level Analysis
a. Objective 6: Clean Water and Proper Sanitation
The following is an analysis of the level of effectiveness of each indicator for achieving objective 6, namely clean water and proper sanitation, which is obtained from the analysis of budget achievements and the analysis of output achievements:

Table 2. Analysis of the Level of Effectiveness of Program Indicators for Achieving Goal 6 of the Environmental Pillar SDGs

TA	Budget Achievement	Budget Effectiveness Level	Output Achievement	Output Effectiveness Level
Indicator: Percentage of dwellings with access to clean water				
2019	84,19	High	101,81	Very High
2020	98,25	Very High	99,55	Very High
2021	90,71	High	100,14	Very High
2022	90,62	High	101,93	Very High
Indicator: Percentage of dwellings that have proper sanitation facilities/access				
2019	89,16	High	99,01	Very High
2020	90,37	High	98,94	Very High
2021	87,78	High	99,78	Very High
2022	85,69	High	100,07	Very High
Indicator: Percentage of municipal irrigation in good condition				
2019	71,13	High	105,71	Very High
2020	99,19	Very High	87,98	Very High
2021	98,41	Very High	107,80	Very High
2022	99,36	Very High	103,46	Very High
Indicator: Percentage of water debit availability through the provision of storage buildings				
2019	-	-	-	-
2020	-	-	-	-
2021	90,21	High	37,56	Very Low
2022	83,63	High	106,43	Very High

From the analysis of the level of effectiveness of each indicator and also from 2019-2022, it is obtained that almost all have high and very high effectiveness except for the indicator of the percentage of availability of water discharge through the provision of storage buildings in 2021 which has very low output achievements, even though the budget achievements are high.

So if it is summarized for the achievement of goal 6, taking into account all the forming indicators, the following is a summary table:

Table 3. Summary of Analysis of the Level of Effectiveness of Program Indicators for Achieving Goal 6 of the Environmental Pillar SDGs

TA	Summary of Budget Effectiveness	Output Effectiveness Summary	Conclusion
2019	3 indicators of high category, 1 indicator no data categorized as ineffective	3 indicators of very high category, 1 indicator no data categorized as ineffective	From the summary of each year, for objective 6, year 2022 which has the best effectiveness for both budget and output (assuming medium to excellent categories are effective, while low to no data are ineffective)
2020	2 indicators in the very high category, 1 indicator in the high category, and 1 indicator with no data are categorized as ineffective	3 indicators of very high category, 1 indicator no data categorized as ineffective	
2021	3 high category indicators 1 very high category indicator	3 high categories 1 very low category	
2022	1 high category indicator and 3 high category indicators	4 indicators in the very high category	

b.   Goal 11: Sustainable Cities and Settlements

The following is an analysis of the level of effectiveness of each indicator for the achievement of goal 11, namely sustainable cities and settlements obtained from the analysis of budget achievements and analysis of output achievements:

Table 4. Analysis of the Effectiveness Level of Program Indicators for Achieving Goal 11 of the Environmental Pillar SDGs

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
Indicator: Percentage of healthy and safe neighborhoods supported with PSUs				
2019	85,47	High	177,50	Very High
2020	92,62	Very High	44,44	Very Low
2021	64,96	Low	48,00	Very Low
2022	85,49	High	66,97	Sedang
Indicator: Percentage of affordable housing services				
2019	98,41	Very High	98,00	Very High
2020	93,63	Very High	179,82	Very High
2021	87,50	High	152,28	Very High
2022	73,73	Sedang	132,33	Very High
Indicator: Percentage of settlement infrastructure handling				
2019	-	-	-	-
2020	-	-	-	-
2021	94,95	Very High	53,28	Low
2022	86,69	High	31,22	Very Low
Indicator: Percentage of uninhabitable houses				
2019	98,41	Very High	-4688,00	Very Low
2020	93,63	Very High	-378,95	Very Low
2021	89,47	High	-820,00	Very Low
2022	89,79	High	-1675,00	Very Low
Indicator: Percentage of slum areas addressed				
2019	-	-	-	-
2020	-	-	-	-
2021	99,60	Very High	133,32	Very High
2022	100,00	Very High	129,04	Very High
Indicator: Percentage of land transport services (number of land transport/number of land transport passengers)				
2019	90,26	High	99,76	Very High
2020	94,51	Very High	54,29	Low
2021	97,19	Very High	91,56	Very High
2022	91,31	Very High	59,07	Low
Indicator: Percentage of public transportation KIR ownership				
2019	97,79	Very High	174,31	Very High
2020	97,50	Very High	193,54	Very High
2021	98,49	Very High	100,56	Very High
2022	91,99	Very High	99,32	Very High
Indicator: Percentage of preservation of cultural diversity and wealth fostered				
2019	-	-	-	-

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
2020	-	-	-	-
2021	71,36	Medium	156,86	Very High
2022	96,43	Very High	125,42	Very High
Indicator: Percentage increase in active traditional arts organizations				
2019	-	-	-	-
2020	-	-	-	-
2021	95,28	Very High	130,00	Very High
2022	99,96	Very High	100,00	Very High
Indicator: Percentage increase in historical actors				
2019	-	-	-	-
2020	-	-	-	-
2021	70,52	Medium	514,29	Very High
2022	99,96	Very High	100,00	Very High
Indicator: Percentage increase in museum visitors				
2019	-	-	-	-
2020	-	-	-	-
2021	87,33	High	92,11	Very High
2022	98,27	Very High	222,22	Very High
Indicator: Percentage of cultural heritage preserved				
2019	-	-	-	-
2020	-	-	-	-
2021	92,34	Very High	2188,18	Very High
2022	99,61	Very High	100,00	Very High
Indicator: Percentage of disaster-resilient communities				
2019	71,70	Sedang	560,00	Very High
2020	87,06	High	65,60	Low
2021	89,27	High	166,88	Very High
2022	91,93	Very High	102,60	Very High
Indicator: Average disaster response time				
2019	76,62	High	100,00	Very High
2020	77,90	High	8,33	Very Low
2021	97,05	Very High	103,00	Very High
2022	57,62	Low	100,00	Very High
Indicator: Percentage of disaster victims who receive logistical assistance				
2019	77,76	High	34,20	Very Low
2020	80,56	High	100,00	Very High
2021	97,59	Very High	37,25	Very Low
2022	98,60	Very High	70,61	Sedang

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
Indicator: Percentage of post-disaster damaged infrastructure handled				
2019	94,45	Very High	96,67	Very High
2020	96,89	Very High	58,83	Low
2021	89,47	High	1020,00	Very High
2022	89,79	High	0,00	Very Low
Indicator: Percentage of disaster victims who received social assistance during the emergency response period				
2019	63,00	Low	100,00	Very High
2020	70,26	Medium	100,00	Very High
2021	75,68	Medium	42,18	Very Low
2022	85,25	High	86,13	Tinggi
Indicator: Percentage of waste handling				
2019	81,81	High	111,08	Very High
2020	97,94	Very High	98,61	Very High
2021	97,41	Very High	100,00	Very High
2022	98,47	Very High	111,77	Very High

For the achievement of objective 11, taking into account all the indicators that make up the following summary table:

Table 5. Summary of Analysis of the Level of Effectiveness of Program Indicators for Achieving Goal 11 of the Environmental Pillar SDGs

TA	Budget Effectiveness Summary	Output Effectiveness Summary	Conclusion
2019	4 indicators of very high category, 5 indicators of high category, 1 indicator of medium category, 1 indicator of low category, and 7 indicators of no data are categorized as ineffective.	9 indicators in the very high category, 2 indicators in the very low category, and 7 indicators with no data categorized as ineffective.	From the summary of each year, for objective 7, the year 2022 has the best effectiveness (assuming that the medium to very good category is effective, while the low to no data category is ineffective).
2020	6 indicators of very high category, 3 indicators of high category, 7 indicators of no data are categorized as ineffective	5 indicators of very high category, 3 indicators of low category, 3 indicators of very low category, and 7 indicators of no data are categorized as ineffective.	
2021	9 indicators in the very high category, 5 indicators in the high category, 3 indicators in the medium category, and 1 indicator in the low category.	13 indicators in the very high category, 1 indicator in the low category, and 4 indicators in the very low category.	
2022	11 indicators in the very high category, 6 indicators	10 indicators in the very high category, 1	

TA	Budget Effectiveness Summary	Output Effectiveness Summary	Conclusion
	in the high category, 1 indicator in the medium category, and 1 indicator in the low category.	indicator in the high category, 2 indicators in the medium category, 1 indicator in the low category, and 3 indicators in the very low category.	

c. Objective 12 Responsible Consumption and Production

The following is an analysis of the level of effectiveness of each indicator for achieving objective 12, namely responsible consumption and production obtained from the analysis of budget achievements and analysis of output achievements:

Table 6. Analysis of the Effectiveness Level of Program Indicators for Achieving Goal 12 of the Environmental Pillar SDGs

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
Indicator: Percentage of prevention of environmental pollution and/or damage				
2019	95,32	Very High	100,00	Very High
2020	-	-	-	-
2021	97,02	Very High	69,22	Sedang
2022	98,47	Very High	100,00	Very High
Indicator: percentage of businesses that have carried out hazardous waste management				
2019	93,72	Very High	78,50	Tinggi
2020	100,00	Very High	100,00	Very High
2021	62,50	Low	100,00	Very High
2022	87,56	High	100,00	Very High
Indicator: Percentage of waste reduction in the community and informal sector (cumulative value)				
2019	99,56	Very High	100,00	Very High
2020	99,82	Very High	100,00	Very High
2021	-	-	100,50	Very High
2022	-	-	98,65	Very High
Indicator: Percentage of compliance of community and activity/business owners of environmental permits				
2019	92,87	Very High	94,58	Very High
2020	73,69	Sedang	81,00	Tinggi
2021	94,85	Very High	140,00	Very High
2022	56,05	Low	200,00	Very High

For the achievement of objective 12, taking into account all the indicators that make up the following summary table:

Table 7. Summary of Analysis of the Level of Effectiveness of Program Indicators for Achieving Goal 12 of the Environmental Pillar SDGs

TA	Budget Effectiveness Summary	Output Effectiveness Summary	Conclusion
2019	4 very high-category indicators	3 very high category indicators and 1 high category indicator	By considering budget effectiveness and output effectiveness, both of which have good effectiveness are 2019. (assuming that the medium to very good category is effective, while the low to no data category is ineffective).
2020	2 indicators in the very high category, 1 indicator in the medium category, and 1 indicator in the data category are categorized as ineffective.	2 indicators are categorized as very high, and 1 indicator has no data categorized as ineffective.	
2021	2 indicators in the very high category, 1 indicator in the low category, and 1 indicator with no data categorized as ineffective.	3 very high category indicators and 1 very medium category	
2022	1 indicator of very high category, 1 indicator of high category, 1 indicator of low category, and 1 indicator of no data is categorized as ineffective.	4 indicators in the very high category	

d. Goal 13: Addressing Climate Change

The following is an analysis of the level of effectiveness of each indicator for achieving goal 13, namely handling climate change obtained from the analysis of budget achievements and analysis of output achievements:

Table 8. Analysis of the Effectiveness Level of Program Indicators for Achieving Goal 13 of the Environmental Pillar SDGs

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
Indicator: Percentage of environmental planning documents that are organized and following standards				
2019	100.00	Very High	100.00	Very High
2020	96.83	Very High	104.69	Very High
2021	95.92	Very High	100.00	Very High

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
2022	98.31	Very High	100.00	Very High

The analysis of the effectiveness level of indicators supporting goal 13, namely the indicator of the percentage of environmental planning documents that are compiled and according to standards from 2019-2022, has a very high effectiveness for both budget and output.

Because there is only 1 (one) indicator that supports goal 13 in the RPJMD of Malang City, the effectiveness will be seen from this indicator, namely, the indicator of the percentage of environmental planning documents that are compiled and following standards, which is seen from the achievement of budget and output performance from 2019-2022 is very high.

e. Objective 15: Terrestrial ecosystems

The following is an analysis of the level of effectiveness of each indicator for achieving goal 15, namely terrestrial ecosystems, with targets obtained from analysis of budget achievements and analysis of output achievements:

Table 9. Analysis of the Effectiveness Level of Program Indicators for Achieving Goal 15 of the Environmental Pillar SDGs

TA	Budget Achievement (%)	Budget Effectiveness Level	Output Achievement (%)	Output Effectiveness Level
Indicator: Percentage of public green spaces managed				
2019	93.89	Very High	100.00	Very High
2020	98.62	Very High	100.00	Very High
2021	87.19	High	100.00	Very High
2022	65.76	Low	100.00	Very High

From the analysis of the effectiveness level of indicators supporting goal 15, namely the indicator of the percentage of public green spaces managed from 2019-2022, there is still a low level of budget effectiveness achievement, namely in 2022. while the level of output effectiveness from 2019-2022 is very high.

There is only 1 (one) indicator that supports goal 15 of the Malang City RPJMD, so its effectiveness will be seen from this indicator, namely the indicator of the percentage of public green spaces managed, which is seen from the achievement of budget and output performance, in 2019 and 2020 which is seen from both budget and output achievements very high.

From the results of analyzing the effectiveness of each goal in 2019-2022, the following summary results are obtained:

Table 10: Summary of the Analysis Results of the Effectiveness of the SDGs Environmental Pillars of Malang City

Goals	Number of Indicators	Year Best effectiveness
Goal 6: Clean water and adequate sanitation	4 indicators	Year 2022
Goal 11: Sustainable cities and settlements	18 indicators	Year 2022
Goal 12: Responsible consumption and production	4 indicators	The year 2019
Goal 13: Addressing climate change	1 indicator	Years 2019, 2020, 2021, and 2022
Goal 15: Terrestrial ecosystems	1 indicator	The year 2019 and 2020

From the above, it can be concluded that the best level of effectiveness in achieving the environmental pillars of Malang City's SDGs is in 2019 and 2022. In 2019 there are 3 (three) objectives for achieving maximum effectiveness viewed from both sides, namely budgeting allocation and the output side. The 3 (three) objectives are objective 12, objective 13, and objective 15. In 2022 there are also 3 (three) objectives for achieving maximum effectiveness viewed from both sides, namely budgeting allocation and the output side. The 3 (three) objectives are Objective 6, Objective 11, and Objective 13.

However, when viewed from the number of indicators that support each goal for the achievement of the environmental pillar of Malang City's SDGs, 2022 is the most effective year in terms of performance achievement of both budgeting allocation and output. The total supporting indicators are 23 indicators, while in 2019 there were only 6 indicators. The large number of indicators certainly supports the achievement of the environmental pillars of the SDGs of Malang City because more programs/activities are mapped with the support of budgeting allocation and are also more focused because there is a determination of output targets.

Efficiency Level Analysis
Based on budget ceiling data and budget realization, as well as output target data and output realization, the calculation results of both output index, output realization index, and efficiency are obtained. The following are the results of each calculation based on the environmental pillar SDGs goals:
a. Objective 6: Clean Water and Adequate Sanitation
The following is the efficiency analysis for objective 6, where the first step is to calculate each efficiency indicator in each year.:
Table 11. Efficiency Analysis of Program Indicators for Achieving Goal 6 of the Environmental Pillar SDGs

TA	IBT	IBR	Efficiency
Indicator: Percentage of dwellings with access to clean water			
2019	59.926.391,90	49.559.155,71	17,30
2020	36.643.687,44	36.164.195,52	1,31

TA	IBT	IBR	Efficiency
2021	74.574.034,68	67.555.122,16	9,41
2022	44.469.390,49	39.536.825,29	11,09
Indicator: Percentage of dwellings that have proper sanitation facilities/access			
2019	148.175.859,06	133.437.884,46	9,95
2020	107.007.090,21	97.738.264,71	8,66
2021	166.158.159,09	146.184.136,46	12,02
2022	111.389.570,82	95.379.012,81	14,37
Indicator: Percentage of municipal irrigation in good condition			
2019	13.126.537,50	8.831.878,92	32,72
2020	6.004.720,00	6.769.515,80	- 12,74
2021	16.487.666,67	15.051.123,48	8,71
2022	13.070.947,35	12.553.057,28	3,96
Indicator: Percentage of water debit availability through the provision of storage buildings			
2019	-	-	-
2020	-	-	-
2021	52.915.673,32	127.110.889,37	- 140,21
2022	29.724.760,80	23.356.772,28	21,42

And from Table 11, it can be calculated the efficiency in each year 2019-2022 of all indicators that support goal 6, which are as follows:

Table 12. Efficiency of Goal 6 of the SDGs Environment Pillar

TA	Objective 6 Efficiency (%)
2019	14.99
2020	-0.69
2021	-36.69
2022	**16.95**

then the efficiency for goal 6 is in 2022 with an efficiency of 16.95 percent.

b. Goal 11: Sustainable cities and settlements

The following is the efficiency analysis for objective 11 where the first step is to calculate each efficiency indicator in each year.:

Table 13. Efficiency Analysis of Program Indicators for Achieving Goal 11 of the Environmental Pillar SDGs

TA	IBT	IBR	Efficiency
Indicator: Percentage of healthy and safe neighborhoods supported with PSUs			
2019	3.751.995.500,00	1.806.598.964,79	51,85
2020	265.975.174,67	554.367.584,08	- 108,43
2021	10.837.636,36	14.666.213,79	- 35,33
2022	6.456.413,49	8.242.239,63	- 27,66
Indicator: Percentage of affordable housing services			
2019	23.129.066,25	23.226.624,97	- 0,42
2020	208.154.974,67	108.383.769,01	47,93
2021	104.263.357,98	59.907.698,49	42,54
2022	136.822.517,39	76.233.731,22	44,28
Indicator: Percentage of settlement infrastructure handling			
2019	-	-	-
2020	-	-	-
2021	260.675.048,96	464.571.833,63	- 78,22
2022	137.973.233,09	383.098.784,36	- 177,66
Indicator: Percentage of uninhabitable houses			
2019	9.251.626.500,00	186.269.169,15	-
2020	60.255.387.405,26	9.744.686.140,91	-
2021	37.858.570.000,00	3.320.884.997,06	91,23
2022	94.721.745.250,00	4.536.040.852,00	95,21
Indicator: Percentage of slum areas addressed			
2019	-	-	-
2020	-	-	-
2021	1.442.431,69	1.077.564,52	25,30

TA	IBT	IBR	Efficiency
2022	2.085.193,40	1.615.868,07	22,51
Indicator: Percentage of land transport services (number of land transport/number of land transport passengers)			
2019	23.215.877,90	21.003.287,48	9,53
2020	17.011.373,08	29.611.561,35	- 74,07
2021	132.425.170,09	140.569.281,85	- 6,15
2022	249.707.630,62	385.959.939,70	- 54,56
Indicator: Percentage of public transportation KIR ownership			
2019	151.977.777,78	85.257.132,62	43,90
2020	153.163.230,77	77.161.115,66	49,62
2021	5.521.141,00	5.407.623,42	2,06
2022	37.008.378,82	34.277.776,12	7,38
Indicator: Percentage of preservation of cultural diversity and wealth fostered			
2019	-	-	-
2020	-	-	-
2021	8.348.751,96	3.797.906,25	54,51
2022	22.007.457,63	16.920.567,57	23,11
Indicator: Percentage increase in active traditional arts organizations			
2019	-	-	-
2020	-	-	-
2021	13.318.055,56	9.760.886,75	26,71
2022	3.644.736,84	3.643.157,89	0,04
Indicator: Percentage increase in historical actors			
2019	-	-	-
2020	-	-	-
2021	11.000.076,19	1.508.333,33	86,29

TA	IBT	IBR	Efficiency
2022	9.892.857,14	9.888.571,43	0,04
Indicator: Percentage increase in museum visitors			
2019	-	-	-
2020	-	-	-
2021	37.839.473,68	35.879.514,29	5,18
2022	35.531.092,22	15.712.703,50	55,78
Indicator: Percentage of cultural heritage preserved			
2019	-	-	-
2020	-	-	-
2021	128.868.708,97	5.438.350,00	95,78
2022	2.811.200,00	2.800.127,50	0,39
Indicator: Percentage of disaster-resilient communities			
2019	303.871.400,00	38.904.472,86	87,20
2020	75.183.850,00	99.782.469,51	- 32,72
2021	62.129.857,96	33.236.713,43	46,50
2022	45.009.668,18	40.330.850,95	10,40
Indicator: Average disaster response time			
2019	30.987.810,00	23.743.718,85	23,38
2020	30.480.000,00	12.387.811,79	59,36
2021	16.959.263,60	16.968.565,57	- 0,05
2022	35.382.689,86	20.386.542,77	42,38
Indicator: Percentage of disaster victims who receive logistical assistance.			
2019	28.217.350,00	64.157.278,07	- 127,37
2020	10.297.700,00	8.295.960,00	19,44
2021	2.551.380,00	6.683.967,79	- 161,97
2022	3.035.580,00	4.238.840,46	- 39,64

TA	IBT	IBR	Efficiency
Indicator: Percentage of post-disaster damaged infrastructure handled			
2019	65.920.766,67	64.406.357,76	2,30
2020	38.932.063,33	64.117.133,14	- 64,69
2021	37.858.570.000,00	3.320.884.997,06	91,23
2022	37.888.698,10	-	-
Indicator: Percentage of disaster victims who received social assistance during the emergency response period			
2019	1.432.078,36	902.231,36	37,00
2020	121.134.900,00	85.112.182,46	29,74
2021	14.730.262,76	26.430.144,93	- 79,43
2022	3.115.408,73	3.083.683,41	1,02
Indicator: Percentage of waste handling			
2019	50.276.340,00	37.027.253,33	26,35
2020	254.126.082,41	252.385.678,39	0,68
2021	217.793.501,41	212.160.285,81	2,59
2022	8.885.974,39	7.828.584,35	11,90

And from Table 13, it can be calculated the efficiency in each year 2019-2022 of all indicators that support goal 11, which are as follows:

Table 14. Efficiency of Goal 11 of the SDGs Environment Pillar

TA	Objective 6 Efficiency (%)
2019	8.54
2020	-4.06
2021	**11.60**
2022	0.83

then the efficiency for goal 11 is in 2021 with a large efficiency of 11.60 percent.

c. Goal 12: Responsible consumption and production
The following is the efficiency analysis for objective 12 where the first step is to calculate each efficiency indicator in each year.:

Table 15: Efficiency Analysis of Program Indicators for Achieving Goal 12 of the Environmental Pillar SDGs

TA	IBT	IBR	Efficiency
Indicator: Percentage of prevention of environmental pollution and/or damage			
2019	10.358.966,67	9.874.035,00	4,68
2020			
2021	18.536.355,62	25.981.863,24	- 40,17
2022	8.885.974,39	8.750.233,76	1,53
Indicator: percentage of businesses that have carried out hazardous waste management			
2019	22.912.450,00	27.354.821,66	- 19,39
2020	56.818,18	56.818,18	-
2021	200.000,00	125.000,00	37,50
2022	519.565,22	454.956,52	12,44
Indicator: Percentage of waste reduction in the community and informal sector (cumulative value)			
2019	7.386.084,29	7.353.298,57	0,44
2020	32.383.079,55	32.324.988,64	0,18
2021		-	
2022		-	
Indicator: Percentage of compliance of community and activity/business owners of environmental permits			
2019	45.853.250,00	45.022.643,17	1,81
2020	46.174.678,00	42.009.197,53	9,02
2021	11.040.250,00	7.480.039,29	32,25
2022	18.218.222,73	5.105.952,27	71,97

From Table 12, we can calculate the efficiency in each year 2019-2022 of all indicators that support goal 12, as follows:

Table 16: Efficiency of Goal 12 of the SDGs Environment Pillar

TA	Goal 12 Efficiency (%)
2019	-3.11
2020	2.30
2021	7.40
2022	**21.48**

then the efficiency for goal 12 is in 2022 with an efficiency of 21.48 percent.

d. Goal 13: Addressing Climate Change

The following is the efficiency analysis for objective 13 where the first step is to calculate the efficiency of the indicator in each year:

Table 17: Efficiency Analysis of Program Indicators for Achieving Goal 13 of the Environmental Pillar SDGs

TA	IBT	IBR	Efficiency
Indicator: Percentage of environmental planning documents that are organized and following standards			
2019	1.050.900,00	1.050.900,00	-
2020	12.370.092,94	11.441.350,59	7,51
2021	6.227.114,00	5.972.755,70	4,08
2022	1.717.080,00	1.688.030,00	1,69

From Table 17, it is known that for objective 13 there is only one indicator that supports the objectives in the 2018-2023 RPJMD of Malang City, namely the indicator of the percentage of environmental planning documents that are compiled and following standards, where the highest efficiency is in 2020, which is 7.51 percent.

e. Goals 15

The following is the efficiency analysis for objective 15 where the first step is to calculate the efficiency of the indicator in each year:

Table 18: Efficiency Analysis of Program Indicators for Achieving Goal 15 of the Environmental Pillar SDGs

TA	IBT	IBR	Efficiency
Indicator: Percentage of public green spaces managed			
2019	3.954.529.866,18	3.712.778.868,61	6,11
2020	2.528.281.234,45	2.493.500.014,35	1,38
2021	28.196.341.186,21	24.583.324.447,84	12,81
2022	18.216.864.942,53	11.980.283.833,33	34,24

From Table 18, it is known that for goal 15 there is only one indicator that supports the goals in the 2018-2023 RPJMD of Malang City, namely the indicator of the

percentage of managed public green spaces, where the highest efficiency is in 2022, which is 34.24 percent.

After calculating the efficiency of each supporting goal of the SDGs for the environmental pillar of Malang City in 2019-2022, the overall efficiency of the SDGs for the environmental pillar of Malang City in 2019-2022 can be calculated, which is shown in the following graph:

Figure 1. Efficiency Analysis of the Environmental Pillar of SDGs in Malang City 2019-2022
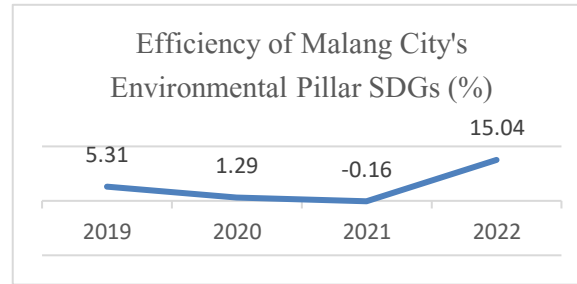
From the results of the overall efficiency analysis, it was found that the highest efficiency occurred in 2022, namely 15.04 percent.

From the efficiency analysis, the following summary is obtained:

Table 19: Summary of Efficiency Analysis Results of SDGs Environmental Pillar of Malang City

Goals	Efficiency Score	Year Best efficiency
Goal 6: Clean water and adequate sanitation	16,96%	Year 2022
Goal 11: Sustainable cities and settlements	11,60%	Year 2021
Goal 12: Responsible consumption and production	21,48%	Year 2022
Goal 13: Addressing climate change	7,51%	The year 2020
Goal 15: Terrestrial ecosystems	34,24%	Year 2022

From the summary of the efficiency analysis, it is known that from each goal that supports the SDGs of Malang City's environmental pillar, none of the efficiency has reached 100 percent or even 50 percent. The highest efficiency is goal 15: terrestrial ecosystems with a value of 34.24 percent supported by 1 indicator. This is followed by goal 12: responsible consumption and production with 21.48 percent efficiency supported by 4 (four) indicators. Then goal 6: clean water and proper sanitation with an efficiency of 16.96 percent, then goal 11: sustainable cities and settlements with an efficiency of 11.60 percent supported by 18 indicators, and finally goal 13: addressing climate change with an efficiency of 7.51 percent supported by 1 indicator.

In addition, the results of the overall efficiency analysis covering all objectives that support the SDGs for the environmental pillar of Malang City show that the highest efficiency is in 2022, namely with an efficiency of 15.04 percent, while the worst efficiency value is in 2021 with an efficiency value of minus 0.16 percent. The best efficiency figure in 2022 is supported by the large efficiency figures in that year in goal 6: clean water and proper sanitation, goal 12: responsible consumption and production, and goal 15 terrestrial ecosystems. Meanwhile, the worst efficiency in 2021 was largely influenced by goal 6: clean water and sanitation, which in that year experienced a minus efficiency of minus 36.39 percent.

Policy Analysis

From the results of the analysis of the level of effectiveness and efficiency analysis, the conclusions are summarized in the following graphic image:

Figure 2: Number of Effective Objectives and Indicators, and Efficiency Score in 2019-2022

From Figure 2, it is concluded that from each year the number of SDGs goals that are most effective, the number of effective indicators, and the greatest efficiency is in 2022.
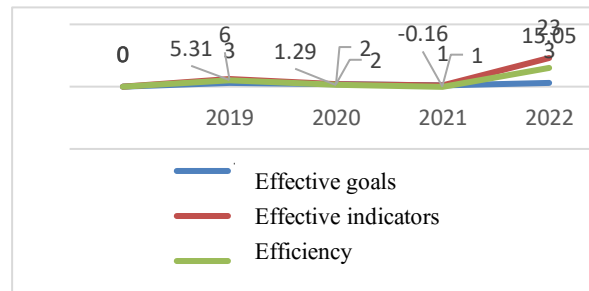
For effective and efficient budgeting allocation policies in terms of views to support the SDGs for the environmental pillar of Malang City which is supported by 5 goals, namely goal 6: clean water and proper sanitation, goal 11: sustainable cities and settlements, goal 12: responsible consumption and production, goal 13: tackling climate change, and goal 15: terrestrial ecosystems. So the policy scheme carried out by the Malang City Government in 2022 needs to be used as a reference. Because the things that have been done in 2022 have shown the best level of effectiveness and efficiency.

From the secondary data that has been collected and analyzed, researchers conclude that the results of the calculation of effectiveness and efficiency analysis are in line with related supporting documents. From the RPJMD of Malang City 2018-2023, Amendments to the RPJMD of Malang City 2018-2023, Renja and Lakip of related Regional Apparatus show that in 2022 there has been clarity of policy direction for the SDGs pillar of Malang City's environment. In 2022, there is no difficulty in mapping both the output target and its realization as well as the budgeting allocation and its realization. This of course makes it easier for the relevant Regional Apparatus to develop programs/activities to sub-activities to achieve the existing goals.

CONCLUSION

Based on the description of the discussion in this study, the following are the conclusions of the research results of public policy analysis in Malang City through the measurement of environmental pillar SDGs indicators in the perspective of budgeting allocation:

1. The level of effectiveness of the implementation of the environmental pillar SDGs in Malang City is 2022. The effectiveness of the implementation of SDGs is supported by the number of indicators that support each goal where the more indicators, the more programs/activities are mapped with the support of budgeting allocation and also more directed because there is a determination of output targets. In 2022 achieved the best effectiveness in goal 6: clean water and proper sanitation, goal 11: sustainable cities and settlements, and goal 13: addressing climate change with a total of 23 indicators.

2. The efficiency of the implementation of the environmental pillar SDGs in Malang City occurred in 2022, with an efficiency value of 15.04 percent. The best efficiency rate in 2022 is supported by the large efficiency rate in that year in goal 6: clean water and proper sanitation, goal 12: responsible consumption and production, and goal 15 land ecosystems.
3. A more effective efficient and sustainable budgeting allocation policy for the implementation of environmental pillar SDGs indicators in Malang City can make 2022 the basic reference year. Especially in matters of program/activity implementation to achieve the goals of the environmental pillar SDGs. In the planning and reporting documents, the output targets and realizations have been well mapped as well as the budgeting allocation and its realization. This of course makes it easier for the relevant Regional Apparatus to develop programs/activities to sub-activities to achieve the existing goals.

Following the conclusions, the researchers' suggestions for the Malang City Government in public policy in Malang City for the implementation of SDGs are as follows:

1. In the preparation of the Malang City SDGs Regional Action Plan (RAD), it is necessary to map the SDGs indicators / Sustainable Development Goals into program indicators and activities and even sub-activities in the Malang City RPJMD, so that Regional Apparatus will easily translate them into their Strategic Plan and Work Plan documents;
2. Make the RAD SDGs into a legal provision in the form of a major regulation to be binding and mandatory for implementation.;
3. Establish cost standards for each target achievement if the program is sustainable. The absence of cost standards for optimal output achievement will diversify budgeting allocation which is only based on the previous year.;
4. For the environmental pillar SDGs, if using the scheme that has been carried out in 2022, it is necessary to improve on goal 11: sustainable cities and settlements where there are 18 indicators and the efficiency result is the smallest at 0.83 percent. And also goal 13: handling climate change, and goal 15: terrestrial ecosystems. Although in goal 15 the efficiency level is high in 2022, keep in mind that in goals 13 and 15 the support is only 1 indicator each. It would be better if the SDGs indicators could be mapped more so that the implementation in the regional apparatus would also be more and achieve maximum SDGs development;
5. The a need to set SDG targets because indicators that do not have targets will be difficult to map and not be implemented in Regional Apparatus.

REFERENCES

Akbar, T. (2018). Kampung Tematik Sebagai Bentuk Partisipasi Masyarakat Dalam Permasalahan Permukiman Kumuh Di Kota Malang. *Wahana*, *70*(2), 37–48. https://doi.org/10.36456/wahana.v70i2.1741

Almaghfi, L. B., Hidayat, K., & Mayowan, Y. (2016). Studi Pemikiran Penerapan Tax Earmarking Pada Bea Perolehan Hak Atas Tanah Dan Bangunan (BPHTB) Di Kota Malang. *Jurnal Perpajakan (JEJAK)|*, *9*(1), 1–9.

Bartocci, L., Grossi, G., Mauro, S. G., & Ebdon, C. (2022). The journey of participatory budgeting: a systematic literature review and future research directions. *International Review of Administrative Sciences*, *8049*. https://doi.org/10.1177/00208523221078938

Fauzi, A., & Oxtavianus, A. (2014). Pengukuran Pembangunan Berkelanjutan di Indonesia - Akhmad Fauzi. In *Mimbar* (Vol. 30, Issue 1, pp. 42–52).

Guerrero, O. A., & Castañeda, G. (2022). How does government expenditure impact

sustainable development? Studying the multidimensional link between budgets and development gaps. *Sustainability Science*, *17*(3), 987–1007. https://doi.org/10.1007/s11625-022-01095-1

Harjo, I. W. W., Kusumastuti, A., Rahayu, D. P., & Puspitosari, W. A. (2021). Indeks Keberlanjutan Program Kotaku (Kota Tanpa Kumuh) Di Kota Malang. *Jurnal Pengembangan Kota*, *9*(1), 50–63. https://doi.org/10.14710/jpk.9.1.50-63

Johnston, R. B. (2016). Arsenic and the 2030 Agenda for sustainable development. *Arsenic Research and Global Sustainability - Proceedings of the 6th International Congress on Arsenic in the Environment, AS 2016*, 12–14. https://doi.org/10.1201/b20466-7

Mattei, G., Santolamazza, V., & Grandis, F. G. (2022). Design of the participatory budget: how to turn citizens into process protagonists. *International Journal of Public Sector Management*, *35*(3), 294–316. https://doi.org/10.1108/IJPSM-02-2021-0045

Peraturan Menteri Dalam Negeri Republik Indonesia Nomor 86 Tahun 2017, 644 (2017).

Muchson. (2017). *Statistik Deskriptif* (Guepedia (ed.); 1st ed.). Guepedia. https://books.google.co.id/books?hl=id&lr=&id=4n0tDwAAQBAJ&oi=fnd&pg=PA36&dq=muchson+2017&ots=-XCHXs1o8m&sig=eLb5LdzEOQZAa6bh7Ik-zNaygCc&redir_esc=y#v=onepage&q&f=false

Olfah, S. T. (2018). Tinjauan Efisiensi Anggaran Dalam Penganggaran Berbasis Kinerja Pada Satuan Kerja Kementerian Negara/Lembaga (Studi Pada Satuan Kerja Di Lingkungan Badan Pendidikan Dan Pelatihan Keuangan Tahun Anggaran 2011 Sampai 2015). *Jurnal Anggaran Dan Keuangan Negara Indonesia (AKURASI)*, *2*(1), 19. https://doi.org/10.33827/akurasi2018.vol2.iss1.art35

Purbadi, Y. D., & Lake, R. C. (2019). Konsep Kampung-Wisata Sejahtera, Kreatif, Cerdas dan Lestari Berkelanjutan. *EMARA: Indonesian Journal of Architecture*, *5*(1), 12–23. https://doi.org/10.29080/eija.v5i1.641

Shao, L., Zhang, H., & Irfan, M. (2022). How public expenditure in recreational and cultural industry and socioeconomic status caused environmental sustainability in OECD countries? *Economic Research-Ekonomska Istrazivanja*, *35*(1), 4625–4642. https://doi.org/10.1080/1331677X.2021.2015614

Sisto, R., López, J. G., Quintanilla, A., de Juanes, Á., Mendoza, D., Lumbreras, J., & Mataix, C. (2020). Quantitative analysis of the impact of public policies on the sustainable development goals through budget allocation and indicators. *Sustainability (Switzerland)*, *12*(24), 1–15. https://doi.org/10.3390/su122410583

Walpole, R. E. (1995). *Pengantar Statistika* (3rd ed.). Jakarta : Gramedia Pustaka Utama.