

## **ANALYSIS OF PUBLIC ENVIRONMENTAL EXPENDITURE: THE CASE STUDY OF JAKARTA PROVINCE**

Didi Prabowo Putra<sup>1</sup>, James Thomas Edward<sup>2</sup>

<sup>1</sup>Master of Economic Planning and Development Policy, Faculty of Economics and Business, Universitas Indonesia, Depok Indonesia

<sup>2</sup>Professor of International Corporation and Policy at Ritsumeikan Asia Pacific University, Beppu Japan

*E-mail: didilubis@gmail.com*

### ***Abstract***

*The national struggle for sustainable development influenced the sub-national governments level in composing their policy directions especially public budget policy. Nonetheless, although the environmental protection function is important, it tends to be marginalized in the national budgetary debates. This study attempts to analyse the 'green budget' allocation and utilization within the Regional Medium-term Development Plan 2013–2017 of Jakarta Province. The methodology draws on descriptive analysis of derived data from annual provincial budget documents, and in-depth interview analysis explored potential barriers and drivers give rise to gaps in budget between the allocation and realization stage. Results show that the allocated 'green budget' posture of Jakarta Province was 6.1% in the five years average, significantly higher when compared to the national level at 0.8 – 1 percent. However, the realization was low with average actual spending at 47.1% of the total allocated budget. In addition, based on COFOG, the biggest function/purpose supported by the environmental affairs budget was biodiversity and land protection which are responsible for green open space provision in Jakarta Province. The interviews point to the collaboration aspect among the profound drivers to support environmental affairs policy. Meanwhile, the aspects of staff capacity, public awareness, and policy alignment are believed to be significant barriers that the government is recommended to take into consideration.*

**Keywords:** *Environmental Affairs, Provincial Budget, Budget Allocation, Budget Realization, COFOG*

**JEL Classification:** *H-72, Q-58*

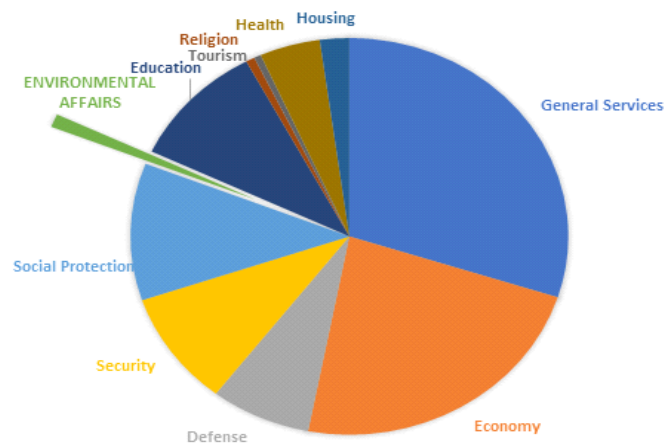
### **INTRODUCTION**

The rapid growth gave a bad impact on society as it created negative externalities into the environment. For instance, increased depletion of forest area, polluted air and water, and environmental degradation were main problems in achieving sustainable development. Due to the demanding climate change issue, in 2009, President of the Republic of Indonesia agreed to implement a sustainable

development policy that shifts from 'greedy' to a 'green' economy. Some focuses on green economy initiatives. For these responsibilities, amount of financial support is surely required. Meanwhile, at the national level of Indonesia, Ministry of Environment and Forestry was not the main spender and tend to be marginalized in key budgetary debates (Haryanto & Nurkholis, 2014).

The portion of environmental affairs acquired less than one percent of the total national state budget allocation, as presented in **Figure 1**, in 2016 (*Direktorat Jenderal Anggaran*, 2017). This reality is still far from ideal in regard with what has been planned on the first scenario of Green Planning and Budgeting Strategy Indonesia's Sustainable Development in which to elevate the allocation budget share of national expenditure that is devoted to green priorities, from current level of 1.0% to 3.8% by 2035 (Ministry of Finance, 2015).

**Figure 1 Budget Allocation Posture in Indonesia's State Budget 2016**



The role of sub national governance in achieving national roadmap of sustainable development is vital. In line with the sustainable development ideas, the increasing public expenditure for environmental protection becomes important pillars for greening the regional economy. For that reason, the Provincial Government of Jakarta composes the 'green budget' in accordance with the regional economic potential and environmental quality. Nevertheless, according to the previous study among six provinces in Indonesia, most regional-level governances were not yet ready to implement green budgeting due to lack of commitment from their leaders and officials' capabilities (Lumbanraja, 2017).

This study attempts to investigate the commitment of Provincial Government of Jakarta in terms of environmental management function by analyzing the budget trends. Also, it aims to explore the plausible barriers and drivers regarding gaps between allocation budget and realization budget in fiscal year of 2013 – 2017.

## LITERATURE REVIEW

Since the 1970s, human has grown their environmental and social awakening through a long journey that ultimately realized the finite nature of the earth, that the extensive human existence leaves significant footprints, such as pollutants, and water and land exploitation, and affects the environment at several levels. This realization has brought to widespread in a global manner of the concept of sustainability as a fundamental core principle in the minds and moralities of major governments, International Corporations, NGOs, and other organizations (Hardisty, 2010).

The Indonesian success in economic development brought the country from a low-income nation into the middle-income bracket in the early 1980s to 1990s, but, with profound consequences for the environment. Moreover, the Indonesian Ministry of Environment and Forestry (2014) reported that the extensive agriculture activity in the late 1970s affected the degradation of land and water quality due to continuously unregulated fertilizer and pesticide utilization. As stated by Vincent et al., (2002), the free market mechanisms tend to undersupply public goods, such as environmental quality in many forms, and oversupply goods whose causes negative externalities, including pollution that harm humans and reduce the productivity of environmentally sensitive sectors. This reasoning justifies public expenditure by the government to ensure the better conditions of environmental management, related to the provision of public goods and reducing negative environmental externalities.

The need for public expenditure management in country environmental analysis has main accepted objective, those are (i) maintaining sustainable fiscal discipline; (ii) promoting efficiency and equity in expenditure strategy; and (iii) encouraging effectiveness in resource utilization (Swanson & Lundethors, 2003). Budget draws an enormous influence on the economy. At about 50 percent of the total Gross Domestic Product (GDP) of industrialized countries ran through public budgets (Wilkinson, Benson, & Jordan, 2008). Empirical view on public spending analysis conducted by Ortiz-Ospina & Roser, (2016) showed in the 21st century the government expenditure exceeds 50% in many European countries.

According to Cimpoeru (2012), medium-term budgets can be described as sequential frames or predictions of revenues and expenditures for a period of 3 or 5 years. They are considered as means of budget management, which are regularly updated, rather than financial instruments with legal values and lead to institutional change. The last five years (2013 - 2017) is the period for Medium-term Regional Development Plan of Jakarta Province, with a vision for “Jakarta: The Capital of Republic of Indonesia that is Safe, Comfortable, Prosperous, Productive, Sustainable and Global Competitiveness” (*Badan Perencanaan Pembangunan Daerah DKI Jakarta*, 2013). Following this vision, there is one mission that strongly related to environmental sustainability that is “Improving the carrying capacity and environmental capacity and efficient use of natural resources” (*Badan Perencanaan Pembangunan Daerah DKI Jakarta*, 2013, page 146).

At the national level, one of the commitments of Indonesia Government towards environmental protection is reflected in Presidential Decree No. 61 the Year 2011 especially in handling issues on climate change combat, and also protection of the environment. The primary fund source for these functions mainly comes from the

state budget, local budget, private sector, and other sources legalized by regulations, however, they, most of the time, become a significant constraint in implementation (Haryanto & Nurkholis, 2014). Therefore, in their research, they suggested that governments collaborate with the private subsidizing in leveraging the capacity of green budget. To be significant, the climate change and environment protection-based budgeting needs to have at least 3.0 – 5.0 percent of the total annual state budget.

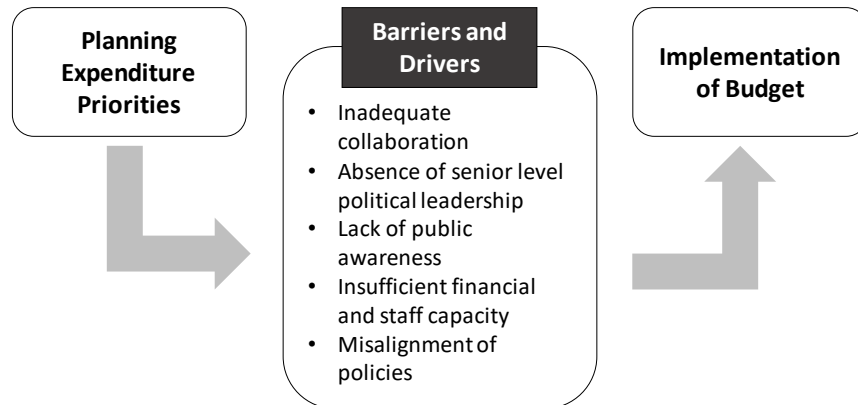
The COFOG, developed by the Organisation for Economic Co-operation and Development (OECD), enables local government organizations (LGOs) to analyse the economic effects of government expenditures in terms of cash transfers, purchases of goods and services, production of goods and services, and investment in nonfinancial assets. This classification method divides general government expenditure into ten main spending categories that correspond to specific government activities, such as general public services, health; economic affairs, environmental protection, defense, culture and religion, education, social protection (Swanson & Lundethors, 2003).

Division 05 of COFOG, it deals with expenditures categories aimed at environmental protection, such as the prevention, reduction, and elimination of pollution and other forms of environmental degradation. Moreover, the classification can be broken down into six sub-divisions, as follows (International Monetary Fund, 2014): Waste management; Wastewater management; Pollution abatement; Protection of biodiversity and landscape; Research and development on environmental protection; and Other environmental protection areas.

This study employs the framework of green budgeting life cycle by Wilkinson, Benson, and Jordan (2008) wherein they provide interconnected stages of five general aspects of an integrated and adaptive fiscal process, planning expenditure priorities; formal adaptation of the budget; implementation of the budget; monitoring, evaluation, and reporting; and revenue rising. However, in this study, the analysis of regional expenditure mainly focusses on the planning prioritizing and the implementation process to explore the budget policy of environmental management are undergone by the local government of Jakarta.

Uittenbroek (2016) came with a qualitative study on an organizational routine as a potential barrier in implementing climate adaptation policy. She argued that the stability in organizational routine could hamper the mainstreaming of a policy by emerging a self-reinforcing mechanism in the implementation process. On the other hand, Burch (2010) and Oulahen, Klein, Mortsch, O'Connell, & Harford, (2018) analysed the barriers on implementation of climate change adaptation policy, as well as giving insight in transforming barriers into drivers of action. A comprehensive in-depth interview with numerous planners and other policy practitioners yielded five significant barriers to the mainstreaming of policy in response to global climate change, those are: inadequate collaboration, absence of senior-level political leadership, lack of public awareness, insufficient and staff capacity, and misalignment of policies in the government institutional level (Oulahen et al., 2018).

Referring to those frameworks, this study attempts to formulate a proper conceptual framework in regional budget analysis for environmental management as shown in **Figure 2**.

**Figure 2 Conceptual Framework**

The rationale for study on barriers in policy implementation of climate adaptation mainstream was necessary due to emerged difficulties during the translation process from planning document into practice (Uittenbroek, 2016). Align with that, Oulahen et al. (2018) formulated five key themes of barriers and drivers for plan implementation of climate change adaptation policy in Canada at various government levels. This study employs the analysis method developed by Oulahen et al. (2018) in order to identify the potential barriers and drivers in Jakarta's budget policy on environmental management. This study modifies a more suitable framework to analyse the plausible barriers and drivers in budget policy implementation, in which focus on aspects of collaboration, political leadership, public awareness, financial support and staff capacity, and misalignment of policies within the Provincial Government of Jakarta.

## METHODOLOGY

In order to respond the problem statement, this study employs quantitative and qualitative approach comprise of data sources, data collection technique, and data analysis. The primary objective of this study is analysis of regional budget document that aims to illustrates the trends of budget allocation and realization on environmental management function and the purpose categorization of the budget expenditure in 2013 – 2017. For the secondary objective of identifying barriers and drivers on budget policy implementation, this research employs qualitative approach by conducting interview with key actors in budget planning and spending in Provincial Government of Jakarta. Interview methods able to fill gaps in research in order to complement the untouched side from document analysis (Burch, 2010) by acquiring new information and experience, as well as assessments and public opinion (Oulahen et al., 2018).

Primary data sources in this research are the informants of in-depth interview within qualitative design. All selected informants for this study directly engaged in environmental management budget planning or worked in local office that utilize the environmental affairs budget in Provincial Government of Jakarta. Moreover, this study involves representative of community to acquire their experience and opinion

about the environmental management policy in Jakarta Province in period of time 2013 – 2017.

This study also attempts to analyse the environmental expenditure within Jakarta's Provincial Budget. The data for this study was obtained from the Jakarta Open data publication website on URL of <http://data.jakarta.go.id> that openly accessible to public. The main data domain derived for analytical process was the public budget documents (*Anggaran Pendapatan dan Belanja Daerah/APBD*) of Jakarta Provincial Government within five years period of time, from 2013 until 2017. Furthermore, this study breaks down aggregate provincial budget data into six administrative municipals and regency in Jakarta.

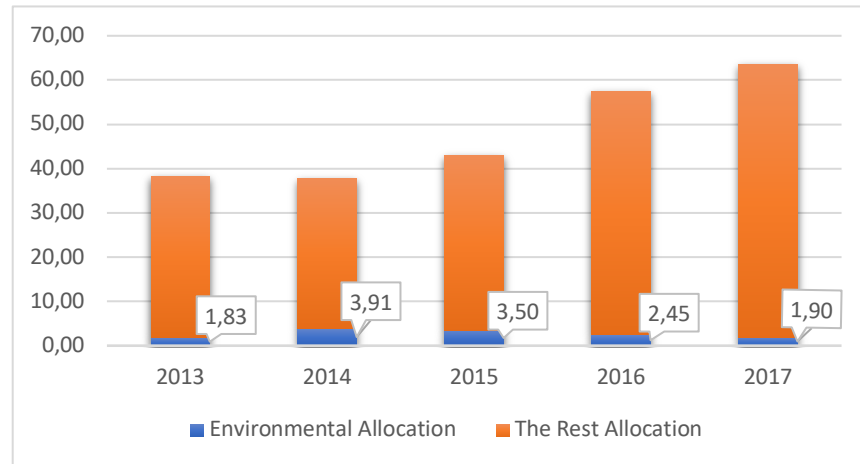
Given the geographic and demographic characteristic, the Jakarta Province and its six municipalities have unique challenges and potentials towards sustainable development. As an emerging urban city in coastal area, Jakarta is prone to climate-related disasters, especially the northern and east districts, including the North Jakarta and East Jakarta Municipal, and Seribu Islands Regency (Yoo et al., 2014). While the West Jakarta Municipal faces the high population density and cramped slump area issues, the South Jakarta and Central Jakarta was gifted with relatively high economic size in term of regional gross domestic product (GDP), and the human development index.

In order to further explore the relative size of budget allocation for environmental protection and its composition, this study employed the international practice of Classification of the Functions of Government (COFOG). This classification method divides general government expenditure into ten main spending categories that correspond to specific government activities, such as general public services, health; economic affairs, environmental protection, defense, culture and religion; education; social protection (Swanson & Lundethors, 2003).

## RESULTS

Collected data were organized into categories and arranged from the function of Environmental Affairs to segregate with the other budget function. The result is presented in **Figure 3** During the observed time between 2013 and 2015, the provincial budget was increasing from 38.3 to 43.01 trillion rupiahs, with an average growth by 10 percent occurred in 2015. However, in the following year, this number rose significantly at about 30% from the former fiscal year to reach 57.36 trillion rupiahs and recorded as the highest within the last Jakarta's RPJMD period.



**Figure 3 Jakarta's Provincial Budget Posture (trillion Rupiah)**

Source: Research analysis, 2019

On the other hand, environmental affairs portion took an only small part in Jakarta's budget posture. As shown in **Figure 3**, it easy to understand the small portion of the environmental protection budget that was allocated over the five years, which the five years average showed 6.1% of total provincial budget allocation. The percentage was always less than ten and experienced a negative trend since 2014 to the most recent recorded data. Refer to previous study in national level, Haryanto & Nurkholis (2014) argued that, to significantly yield outcomes, environmental and climate change based budgeting requires of at minimum 3.0 – 5.0 percent of the total APBN / APBD expenditure.

The similar findings also occurred in the national level of Indonesian budget, in which, the initial analysis of environmental expenditure between fiscal year of 1995 and 1999 showed the decreasing nominal of green budget occurred during the observation period. However, regarding the historical fact of economy crisis in 1997-1998 in Indonesia, the overall budget in other sectors also fell sharply far below those in 1995 (Vincent et al., 2002).

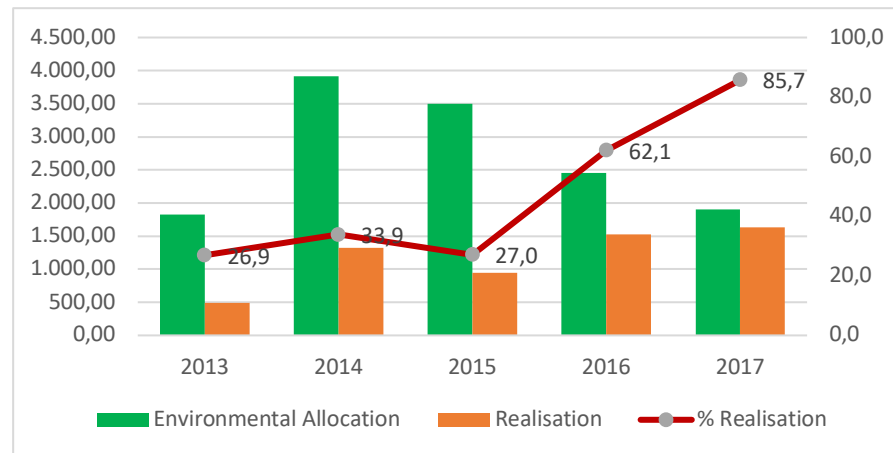
Moreover, the interview analysis with key actors in environmental budget policy points out that misalignment of policies in the form of procurement regulation primarily hampers its implementation, along with other discovered barriers namely public awareness and staff capacities. The aspect of collaboration demonstrates leverage for policy implementation in all respects, meanwhile, political leadership evinces a moderate signal in-between barrier and driver sides

## DISCUSSION

Furthermore, this study explores the real expenditure of allocated budget on environment affairs subject in Jakarta. The graph shown in **Figure 4** explains that only a small portion of the environmental allocated budget was utilized from 2013 to 2015, which the average of percentage realization is 29.3% within the observed years. The lowest budget absorption for this budget occurred in 2013, in which there were only

as much as 491.05 billion IDR of total 1.825 trillion IDR spend (26.9%). The gap between allocated and utilized budget asserted the weakness of local government organization in budget policy implementation.

**Figure 4 Jakarta's Provincial Budget Allocation and Budget Realization on Environment Affairs (billion Rupiah)**



The Local Development Planning Agency of Jakarta Province (BAPPEDA Jakarta), in their report, stated that in a planning perspective, these phenomena indicated overly optimistic targeting from local government organizations in composing their budget plan. Even further, some LGO were suspected to improperly proposing bulk shape budget without inclosing the detailed budgeted activities (Badan Perencanaan Pembangunan Daerah DKI Jakarta, 2018). For instance, in 2014, the budget allocation in Agriculture and Forestry Office has one particular program for mangrove forest development that did not contain any specific activities and detailed expenditure plan on it. Thus, in the end of fiscal year 2014, the program did not utilize the allocated environmental affairs budget significantly, which is very necessary in improving coastal environment sustainability.

In deeper analysis, this study breaks down the Jakarta's budget in category of environmental affairs by its main function/purpose based on the COFOG classification, as presented in **Table 1**. It is clearly presented that the biggest budget allocation is allocated for the function of biodiversity and landscape protection among any others, even though the figures are keep decreasing since the 2014. Similar to it, the budget function on pollution abatement, and environmental research and development has also experienced the down turn until to last observed data in 2017. However, the unspecified function on environmental affairs budget, in general, was keep increasing over the observed period. This non-specific fund is spent on general purpose and administrative activities in LGOs of Provincial Government of Jakarta Province, such activities as regulation synchronization, officials' service improvement, internal financial management, and many more.



**Table 1 Environmental Expenditure of Jakarta Province by Main Function/Purpose (million Rupiah)**

COFOG Classification	2013	2014	2015	2016	2017
Waste management	0.0	0.0	0.0	20,977.0	32,220.0
Wastewater management	0.0	0.0	0.0	0.0	0.0
Pollution abatement	30,273.2	29,222.7	33,925.8	7,674.7	5,055.1
Biodiversity and landscape protection	1,502,696.5	3,313,075.2	2,977,674.6	1,643,956.4	967,873.0
Environmental research and development	159,428.0	67,359.2	24,577.6	13,145.3	8,080.0
Environmental protection not elsewhere classified	133,062.3	548,870.9	461,837.9	767,866.4	890,579.7

Moreover, from the same processed data in **Table 1**, the environmental affairs budget for waste management appears in the table column of 2016 and 2017. It confirms the aforementioned analysis about the merger of the Sanitation Office, formerly categorized in Public Works Affairs, with the Environmental Management Agency, as the impact of provincial regulation implementation (*Peraturan Daerah Provinsi DKI Jakarta Nomor 5 Tahun 2016*) that in some extent alters the budget configuration. On the other hand, the funds for wastewater management are not found in the COFOG classification because, until 2017, this budget function was still included outside the environmental affairs budget.

The interview analysis with key actors in environmental budget policy points out that misalignment of policies in the form of procurement regulation primarily hampers its implementation, along with other discovered barriers namely public awareness and staff capacities. This finding confirms that when the policies between the higher level of a governance body and the lower one is not adequately aligned, consequently, it leads to an imperfect planning process that was ultimately resulting in implementation deficit for environmental management policy. The misalignment regulation between newly adopted procurement system and the demands of flexibility purchasing mechanism results in significant gaps between budget allocation and realization.

The actors tend to take routine tasks from their organizational culture as a pragmatic solution to respond to unclear guidelines. Uittenbroek (2016) argued that organizational routine gives benefits by exhibit continuity in interaction and coordination between actors, however, paradoxically it also hampers the adaptation regarding new methods or objectives entering the existing order

As the most driving aspect, the collaboration is significantly making advancement in managing the environment in term to policy implementation is not only inter-government and intra-government institutions involvement but also the social organisation. The interview with environmentalist community representative revealed that for some projects and occasions, the collaboration between the community and the municipality often occur and lead to high achievement. The collaborative works are also meant to increase public participation and awareness toward environmental affairs.

The interview results give a profound perspective about the collaboration aspect in environmental management, that involves multi-level governments and cross-sectoral organizations, apparently drives implementation of the policy and positively affects the outcomes. Aa Oulahen et al. (2018) stated that having good collaboration in regional and local government creates opportunities in policy implementation.

## CONCLUSIONS

Environmental sustainability, as an evolving paradigm resulted through a long journey of interactions between economic, social, political and environmental development, has also influenced the provincial government of Jakarta in composing its policy direction. National green economy initiatives as a guideline towards sustainability development, unfortunately, has not been able to push environment function into a higher position in the budgetary debates, thus the allocation for environmental affairs portion tend to be marginalized in national state budget documentation. This study, therefore, explores the existence of the 'green budget' and its utilization within the Jakarta's Provincial Budget during the Regional Medium-term Development Planning 2013 – 2017.

Analysis on collected data derived from Local Development Planning Agency showed that the increasing of total provincial budget was, unexpectedly, has a contrary pose to the allocation of environmental affairs budget over the five years observation. In average, the 'green budget' posture of Jakarta Province was 6.1 percent, and relatively higher compare to the national level at 0.8 – 1 percent in 2016 only. However, the realization was quite low which had an average actual spending at 47.1 percent within the five fiscal years.

Detailed analysis on budget function/purpose in environmental affairs using the COFOG classification showed that the biggest allocation was on Biodiversity and landscape protection. One program included in this function was Green Open Space (GOS) Provision, which most of the allocated budget was meant for land acquisition and city park improvement.

Budget allocation and realization for environmental function in the municipal level was vary, which are hardly to indicate the resemblance with what was occurred to the provincial level. The East Jakarta Municipality experienced the biggest 'green budget' allocation in 2014, although, utilized it at the lowest level at the same time. On the other hand, The Seribu Islands Regency relatively comprised low budget allocation, yet, can be equalized with The Central Jakarta Municipality and The South Jakarta Municipality in regards actual budget utilization. Generally, the five municipalities performed better environmental affairs budget utilization in 2016 and 2017 which was at about 60 percent.

According to aforementioned summaries, there is averagely 52.9 percent budget gaps emerged between allocation and realization during 2013 to 2017. To investigate the results of budget analysis deeper, this study further explores potential barriers and drivers in the implementation of environmental affairs budget policy in the regional government of Jakarta Province. There are five key aspects in policy implementation that become a focus for the interview process with key actors in

environmental governance; those are collaboration, political leadership, public awareness, financial and staff capacity, and misalignment of policies. From the in-depth interviews, collaboration is the only aspect that appraised to be a significant driver in policy implementation in which all actors confirmed to have adequate experiences in collaborative works. On the other hand, the political leadership aspect is equally judged as both barriers and drivers for implementation of environmental management policy by which respondents had contradictory arguments. Meanwhile, aspects of financial and staff capacity, public awareness, and misalignment of policies are believed to hamper the policy implementation the most. Misalignment of procurement policy and the purchasing mechanism of LGOs, therefore creates significant gaps between the allocation and realization budget in provincial government of Jakarta in 2013 – 2017.

The provincial government of Jakarta have to overcome barriers that emerged in the policy implementation process and must maintain the drivers as the potential value in organization culture. According to barriers and driver analysis, there is three central aspects that the government should address as follows:

1. Staff capacities. Not only the capacity, the sufficient number of capable staffs are also required in environmental management endeavours. There should be no more vacant position for a quite long time in the organization structure to avoid the ‘brain drain’ phenomenon. In this respect, the government have to conduct employee hiring for government official positions, as well as to improve the existing staff capacity.
2. Public Awareness. Community involvement in planning, formulating, and executing is crucial in order to foster awareness. Accordingly, the government should formulate more acceptable participatory action with the communities to the lower level. Besides, local governments should ensure every policy agenda is available and accessible for all stakeholders engaging the process as well as common public. In this global era, this attempt should be more feasible to carry out. The government could utilize various media, both traditional and digital, to publish every information about environmental management policies.
3. Policy Alignment. The central government should formulate a comprehensive guideline for regional government in an environmental management function. Also, the regional government should facilitate to pursue coordination improvement between working units to achieve coherent policy implementation. This constructive organizational culture would urge local governments to implement its policy in more effectively and efficiently.

## REFERENCES

- Badan Perencanaan Pembangunan Daerah DKI Jakarta. (2013). *Rencana Pembangunan Jangka Menengah Daerah Provinsi DKI Jakarta Tahun 2013 - 2017*. Jakarta.
- Badan Perencanaan Pembangunan Daerah DKI Jakarta. (2018). *Rencana Pembangunan Jangka Menengah Daerah Provinsi DKI Jakarta Tahun 2018 - 2022*. Jakarta.
- Badan Pusat Statistik Provinsi DKI Jakarta. (2018). *Jakarta in Figures 2017*. BPS-

- Statistics of DKI Jakarta Province*. Jakarta.
- BAPPEDA Provinsi DKI Jakarta. (2018). *Informasi APBD 2017*. Jakarta: BAPPEDA Provinsi DKI Jakarta.
- Beke-trivunac, J., & Jovanovic, L. (2014). An overview of environmental policies of local government organizations in the Republic of Serbia. *Management of Environmental Quality: An International Journal*, 25(3), 263–272. <https://doi.org/10.1108/MEQ-11-2013-0119>
- Bretschger, L. (2017). Climate policy and economic growth. *Resource and Energy Economics*, 49, 1–15. <https://doi.org/10.1016/j.reseneeco.2017.03.002>
- Burch, S. (2010). In pursuit of resilient, low carbon communities: An examination of barriers to action in three Canadian cities. *Energy Policy*, 38(12), 7575–7585. <https://doi.org/10.1016/j.enpol.2009.06.070>
- Cimpoeru, V. M. (2012). an Empirical Study on Key Indicators of Environmental Quality : Green Budgeting - a Catalyst for Sustainable. *Sustainability and Organizational Change*, XIV(32), 485–501.
- Cohen, T. (2012). Can participatory emissions budgeting help local authorities to tackle climate change? *Environmental Development*, 2(1), 18–35. <https://doi.org/10.1016/j.envdev.2012.03.016>
- Direktorat Jenderal Anggaran. (2017). *Postur APBN Indonesia*.
- Firdaus, M. K., Sumabrata, J., Tampi, D. M., & Simanjuntak, E. R. P. (2019). Public Open Space in Realizing Sustainable Urban Development (Study: Environmental Park in East Jakarta, Indonesia). *IOP Conference Series: Earth and Environmental Science*, 264. <https://doi.org/10.1088/1755-1315/264/1/012005>
- Firman, T., Surbakti, I. M., Idroes, I. C., & Simarmata, H. A. (2011). Potential climate-change related vulnerabilities in Jakarta: Challenges and current status. *Habitat International*, 35(2), 372–378. <https://doi.org/10.1016/j.habitatint.2010.11.011>
- Gilmore, E. A., & St.Clair, T. (2018). Budgeting for climate change: obstacles and opportunities at the US state level. *Climate Policy*, 18(6), 729–741. <https://doi.org/10.1080/14693062.2017.1366891>
- Hardisty, P. E. (2010). *Environmental and Sustainability Economic*. (M. C. Newman, Ed.). Boca Raton: Taylor & Francis Group.
- Haryanto, J. T., & Nurkholis, A. (2014). Study for Mainstreaming Environmental and Climate Change Policy On The Development Planning Agenda in Indonesia. *Kajian Ekonomi Dan Keuangan*, 18(3), 181–254.
- International Monetary Fund. (2014). *Government Finance Statistics Manual*. *International Monetary Fund*. <https://doi.org/10.1002/mus.23546>
- Laurian, L., Day, M., Backhurst, M., Berke, P., Ericksen, N., Crawford, J., ... Chapman, S. (2004). What drives plan implementation? Plans, planning agencies and developers. *Journal of Environmental Planning and Management*, 47(4), 555–577. <https://doi.org/10.1080/0964056042000243230>
- López, R., Galinato, G. I., & Islam, A. (2011). Fiscal spending and the environment: Theory and empirics. *Journal of Environmental Economics and Management*, 62(2), 180–198. <https://doi.org/10.1016/j.jeem.2011.03.001>
- Lumbanraja, A. U. (2017). *When Officials Don't Know What They Don't Know*:

- Dunning-Kruger Effect in the Case of Green Budgeting for Local Government. LPEM-FEB UI Working Paper* (Vol. November).
- Ministry of Finance. (2015). *Green Planning and Budgeting Strategy for Indonesia's Sustainable Development , Executive Summary*. Retrieved from <http://www.kemenkeu.go.id/sites/default/files/gpb-strategy.pdf>
- Mulyadin, R. M., Iqbal, M., & Ariawan, K. (2018). Konflik Pengelolaan Sampah di DKI Jakarta dan upaya Mengatasinya. *Jurnal Analisis Kebijakan Kehutanan*, 15(2), 179–191.
- Murniningtyas, E. (2014). *Prakarsa Strategis Pengembangan Green Economy. Deputi Bidang Sumber Daya Alam dan Lingkungan Hidup*. Retrieved from [https://www.bappenas.go.id/files/6714/1170/7264/006630\\_buku\\_green\\_eco\\_ap150\\_2muka\\_17buku.pdf](https://www.bappenas.go.id/files/6714/1170/7264/006630_buku_green_eco_ap150_2muka_17buku.pdf)
- OECD. (2015). *Better Policies for Development 2015: Policy Coherence and Green Growth. Better Policies for Development 2015*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264236813-en>
- Ortiz-Ospina, E., & Roser, M. (2016). Government Spending. *Our World in Data*. Retrieved from <https://ourworldindata.org/government-spending>
- Oulahen, G., Klein, Y., Mortsch, L., O'Connell, E., & Harford, D. (2018). Barriers and Drivers of Planning for Climate Change Adaptation across Three Levels of Government in Canada. *Planning Theory and Practice*, 19(3), 405–421. <https://doi.org/10.1080/14649357.2018.1481993>
- Salon, D., Sperling, D., Meier, A., Murphy, S., Gorham, R., & Barrett, J. (2010). City carbon budgets: A proposal to align incentives for climate-friendly communities. *Energy Policy*, 38(4), 2032–2041. <https://doi.org/10.1016/j.enpol.2009.12.005>
- Schlegelmilch, K. (Ed.). (1999). Green Budget Reform in European Countries. In *Green Budget Reform in Europe: Countries at the Fore front*. <https://doi.org/10.1007/978-3-642-58637-8>
- Setiowati, R., Hasibuan, H. S., & Koestoer, R. H. (2018). Green open space masterplan at Jakarta Capital City, Indonesia for climate change mitigation. *IOP Conference Series: Earth and Environmental Science*, 200(1). <https://doi.org/10.1088/1755-1315/200/1/012042>
- Sinaga, E. J., Hukum, B., Hukum, K., Rasuna, J. H. R., Kav, S., & Selatan, J. (2016). Analysis on Ministries, State Organizations, and Regional Government Low Budget Absorption. *Rechts Vinding BPHN*, 5(2).
- Sintomer, Y., Herzberg, C., & Röcke, A. (2008). Participatory budgeting in Europe: Potentials and challenges. *International Journal of Urban and Regional Research*, 32(1), 164–178. <https://doi.org/10.1111/j.1468-2427.2008.00777.x>
- Steinberg, F. (2007). Jakarta: Environmental problems and sustainability. *Habitat International*, 31(3–4), 354–365. <https://doi.org/10.1016/j.habitatint.2007.06.002>
- Suwarli, Sitorus, R. . S., Widyatmaka, Kumala Putri, E. I., & Kholil. (2012). Dinamika Perubahan Penggunaan Lahan dan Strategi Ruang Hijau. *Forum Pasca Sarjana*, 35(100), 37–52.
- Swanson, A., & Lundethors, L. (2003). *Public Environmental Expenditure Reviews* (



- PEERS*): *Experience and Emerging Practice. Environmental Strategy Papers* (Vol. 7). Washington.
- The World Bank. (2019). World Bank national accounts data, and OECD National Accounts data. Retrieved July 10, 2019, from <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=ID>
- Tokyo Metropolitan Government. (2018). TOKYO'S HISTORY, GEOGRAPHY, AND POPULATION. Retrieved April 10, 2019, from <http://www.metro.tokyo.jp/ENGLISH/ABOUT/HISTORY/history02.htm>
- Torraco, R. J. (2005). Writing Integrative Literature Reviews: Guidelines and Examples. *Human Resource Development Review*, 4(3), 356–367. <https://doi.org/10.1177/1534484305278283>
- Uittenbroek, C. J. (2016). From Policy Document to Implementation: Organizational Routines as Possible Barriers to Mainstreaming Climate Adaptation. *Journal of Environmental Policy and Planning*, 18(2), 161–176. <https://doi.org/10.1080/1523908X.2015.1065717>
- Vincent, J. R., Aden, J., Dore, G., Adriani, M., Rambe, V., & Walton, T. (2002). Public environmental expenditures in Indonesia. *Bulletin of Indonesian Economic Studies*, 38(1), 61–74. <https://doi.org/10.1080/000749102753620284>
- Wilkinson, D., Benson, D., & Jordan, A. (2008). Green Budgetting. In A. J. Jordan & A. Lenschow (Eds.), *Innovation in Environmental Policy? Integrating the Environment for Sustainability* (pp. 70–92). Massachusetts: Edward Elgar Publishing Limited. <https://doi.org/10.1108/ijccsm.2009.41401bae.003>
- Yoo, G., Kim, A. R., & Hadi, S. (2014). Ocean & Coastal Management A methodology to assess environmental vulnerability in a coastal city : Application to Jakarta , Indonesia. *Ocean and Coastal Management*, 102, 169–177. <https://doi.org/10.1016/j.ocecoaman.2014.09.018>
- Young, C. E. F., Rocha, É. R. P., Bakker, L. B. de, & Santoro, A. F. (2012). How green is my budget? Public environmental expenditures in Brazil. *In International Society for Ecological Economics Annual Conference*.
- Yusuf, A. A. (2018). *Trade-Off Antara Pertumbuhan , Keadilan Dan Lingkungan: Mitos atau Realitas?* BANDUNG: UNIVERSITAS PADJADJARAN.
- Zainuddin, A. A. (2010). Kebijakan Pengelolaan Kualitas Udara Terkait Transportasi di Provinsi DKI Jakarta. *Jurnal Kesehatan Masyarakat Nasional*, 4(6), 1–8.
- Zhang, Y. (2013). Urban metabolism: A review of research methodologies. *Environmental Pollution*, 178, 463–473. <https://doi.org/10.1016/j.envpol.2013.03.052>