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ANALYZING THE IMPLEMENTATION OF GREEN-ECONOMY INCLUSIVE STRATEGY IN EAST JAVA PROVINCE THROUGH URBAN GOOD GOVERNANCE IN GREEN-ECONOMY FRAMEWORK: THE CASE OF SURABAYA

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ABSTRACT

The global uncertainty has forced countries including Indonesia to look on ways to stabilize themselves, one of them being the implementation of green-economy development. The lack of inclusive and environmental-oriented policy has created an urgency for East Java Province to prioritize the green-economy implementation. Therefore this paper analyzes a possible implementation of green-economy through Surabaya City's green-economy concept. This city is chosen due to its status being the only city in East Java to have the Green Sister City Surabaya-Kitakyushu program. This paper uses green economy city development which has four main dimensions which are; decision making process, Implementation Capacity, green economy system and the socio-ecological dimension. A qualitative-descriptive method will be used in this paper, along with a thematic analysis technique to deeply explain the topic at hand. The result of this research is a strategy that can be referenced by Surabaya to develop the green-economy city as the city already has its basis, especially in its society's system in approaching green-economy aspects. Aside of that, this research also presents 3 strategies of implementing green-economy policies for cities throughout East Java Province. These strategies are intended for those cities to be able to take the first step in developing a green-economy city by deeper understanding of local context, policy & capacity development, and monitoring & evaluation.

Keywords: *Green economy, Surabaya, East Java, Resilience*

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ABSTRAK

Kondisi ketidakpastian global membawa banyak tuntutan bagi pemerintah negara termasuk Indonesia untuk menstabilkan kondisinya, salah satu caranya adalah dengan menerapkan konsep pembangunan green-economy. Kurangnya pembangunan ekonomi yang inklusif dan kebijakan keseimbangan lingkungan, membuat green-economy sangat perlu diterapkan di Jawa Timur. Oleh karena itu, penulis mencoba menganalisis strategi pembangunan green-economy yang bisa diterapkan, melalui analisis pembangunan green-economy kota Surabaya. Kota ini dipilih, karena merupakan satu-satunya kota yang sudah memiliki kerjasama sister city berbasis lingkungan atau green-sister city. Penulis menggunakan konsep green economy city development yang memiliki empat dimensi utama yaitu decision making process, Implementation Capacity, green economy system dan socio-ecological system. Penelitian ini akan menggunakan pendekatan deskriptif-kualitatif. Penulis menganalisisnya dengan teknik analisis tematik guna menjelaskan lebih dalam mengenai isu yang sedang dibahas melalui empat dimensi tersebut. Hasil dari

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penelitian ini memberikan strategi bagi Surabaya untuk menerapkan pembangunan green-economy city, dengan menunjukkan bahwa Surabaya memiliki dasar yang cukup baik dalam mengembangkan green-economy cities, namun masih tetap perlu pengembangan pada sektor pembangunan sistem di masyarakatnya. Selain itu, penelitian ini juga memberikan 3 strategi agar kota di Jawa Timur dapat melakukan langkah awal untuk mengimplementasikan green economy cities development yaitu dengan mengenali kota lebih dalam, menyusun kebijakan yang tepat serta melakukan monitoring dan evaluasi.

Kata Kunci: *Green Economy; Surabaya; Jawa Timur; Ketahanan*

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Introduction

The world is currently facing various forms of crisis ranging from war, health crisis, and most prominently, economic crisis. After COVID-19 hit the world slowly entered the post-COVID 19 recovery, but the world has once again faced crisis in the form of wars and rivalries between states. International Monetary Fund (IMF) Managing Director, Kristalina Georgieva explained that the IMF has projected further downgrade in global growth until 2023 with signs like higher commodity prices, food insecurity, inflations, and others. The data is shown in IMF's World Economic Outlook Update in January 2023, projecting the fall of global growth from 3.4 percent in 2022 to 2.9 percent in 2023. Amidst these global economic turbulences, states are continuously forced to act accordingly in order to survive, including Indonesia (IMF, 2023).

Research done by Vanani & Suselo (2021) explained that Indonesia experienced economic recession after COVID-19 hit, which also had a domino effect in the form of job loss and an increase of poverty rate. Although some countries were predicted to be threatened by recession in 2023, Indonesia would still be able to persist due to good economic fundamentals aside of some impact due to Indonesia that still depends on global economic relation (Anggresta et al, 2023). The Asian Development Bank (ADB) reported that Indonesia's economy is expected to grow by 4.8% and 5.0% in 2024, further proving the higher chance for Indonesia to survive in the midst of a global economic crisis. Anggresta, et al (2023) then emphasizes for Indonesia to focus on maintaining economic stability by basic needs supply maintenance and increasing the state's financial independence by encouraging more production. Nevertheless, those efforts to face crises are determined not only by the central government, but also the local regions' capability to build a resilient economic strategy. The creation of regional and local policies thus face new challenges to not only face crises, but also still prioritizing digital and green transitions as well (Bailey et al, 2021). The 'green transition' aspect of policy-creation here indicated the integration of green economy development policy in both national and local policies. This integration is important to support the increase of welfareness and national-local economy (Anwar, 2022), and the government's form of commitment toward building a sustainable economy and environment. This paper therefore would focus on one of the local region's strategies toward green economy resiliency, that is in East Java Province of Indonesia.

East Java Province is one of the main national contributors of Indonesia, contributing 14,48 percent to Indonesia's Gross Domestic Product (GDP) in 2021 and second-only to DKI Jakarta Province (Oeliestina, 2022). This province was not excluded from the crises' impact however, and the impact upon the economic condition of this province was prevalent. East Java's economic growth has significantly decreased, as the region's year-on-year (y-o-y)

economic growth had decreased in the fourth quarter (Q4) of 2020 compared to Q4-2019 and had -2,33 percent growth in 2020 (Putri & Rizal, 2022; Oeliestina, 2022). However based on data from Statistic Center of East Java (Badan Pusat Statistik of East Java Province), East Java's economic condition has improved as the quarter-over-quarter (Q/Q) growth from Q1-2021 to Q2-2021 significantly increased from -0,44 percent to 7,05 percent and East Java's growth in 2022 reached 5,34 percent compared to 3,57 percent growth in 2021. Oeliestina (2022) also identified 9 sectors that have positive growth in East Java's economy, which are manufacture industry; waste and recycling management, construction, macro-trading, information and communication, real estate, education, health services, and social activities. Among them, the waste and recycling management sector is a proof of well-maintained progress of green economy development in East Java. Green economy-oriented development also has been integrated into several policies and policy-planning of East Java Province. First in the Local Development Planning 2023 of East Java Province, there are integrations of Sustainable Development Goals (SDGs) which also involve green economy-oriented development and a chapter prioritizing climate change mitigation with managing the greenhouse effect in East Java. Second, the Work Plan of Local Development Planning Agency of East Java has 7 priorities in the plan which involves Strengthening Economic Resilience as the 1st Priority and Developing Environment, Increasing Disaster Mitigation, and Climate Change Mitigation as the 6th Priority, which is also based on the Work Plan of Indonesia's National Development Planning Agency.

However, there has been a concern over trade-off between the development of the manufacturing industry and effort to sustain the environment in the post-COVID 19 time (Prasetyo, 2021). The concern is directed toward increasing industry waste as there is an increasing number of industry productivity, which needs the implementation of a proper waste management policy. There have been several efforts done by the East Java Province's government, such as pushing the East Java's city governments to build more Green Open Space (Prasetyo, 2021). However efforts were still lacking and not inclusive enough to push the balance of environment and economic sustainability.

Various research on the development of a green economy city has existed in the past, mainly on creating the indicators and metrics to measure how far along is a city on the road toward green economy (Puppim de Oliveira, 2013; Shi et al, 2016), or, research on non-Indonesia cities in the likelihood of achieving green economic city (Shi et al, 2016). In regard to Surabaya's environmental policies and the 'green sister city' itself as well as its impact on Surabaya's greening progress, there was also various past research (Dai, 2018: Fauzia, 2021; Kurniawan et al, 2013; Octavia, 2017). However, there has been almost no research which focused on assessing the possibility, the compatibility, of green-economic city standards throughout cities in Indonesia which also includes Surabaya. The research gap we identified here is the fact that there has been little to no research of green economic city development research in Indonesian cities. Therefore, with the goal to have a better prospect of developing more environmentally conscious cities in Indonesia, this research should be deemed as important and contributive toward the research of environmental city development in Indonesia. In that regard, Surabaya was chosen as the model of the paper's study case due to its efforts in the recent decade to transform one of the cities with most environmental concerns, to one with many policies and facilities supporting the development of a green city, most importantly its distinctive 'green sister city' relation with Kitakyushu City of Japan. In other words, Surabaya is the closest thing in the entire East Java that has 'assets' and the capability to develop as a 'green economy city', as well as a blueprint that can be referred to by

other cities of East Java. The analysis will utilize the framework of Green Economy and Urban Good Governance in Green Economy by Puppim de Oliveira, et al (2013). Then this paper will show the research methodology. The writer uses qualitative-descriptive methods to analyze the issues.

The result of this paper is divided into 3 main parts of explanations. The first part is about Surabaya Conditions and the green sister city of Surabaya - Kitakyushu. Then the second part shows the analysis results of Surabaya through green economy dimensions. In this section, this paper divided the explanation into four parts based on the dimension of concept operationalization. This paper also shows the table which could help Surabaya in evaluating the policies and implementation based on four dimensions and four aspects to drive the city better than before. Then, the last part of the result and discussion is explaining about the green economy strategy for cities in East Java. This part shows structural frameworks and strategies that can be used by cities and regencies of East Java to implement the green-economic policies. Finally after that, the writer closes this research paper with the conclusion.

Literature Review

Green Economy

The United Nations Environment Program defines green economy as a low carbon used, socially inclusive access, and resource efficient. In a green economy, the increase of employment and income are pushed by investment on economic activities which allow decreased pollution and carbon emission. Green economy also supports the escalation of energy and resource efficiency and avoiding the decrease of ecosystem services and biodiversity. Green economy has a role in maintaining sustainable production and consumption and resources efficiency for sustainable development. The purpose of sustainable consumption and production is improving production and consumption processes in order to mitigate resource consumption, emission and waste generation. Meanwhile, resource efficiency refers to how the resources are used to transfer the value for citizens and intend to mitigate the amount of the resources or emissions that are needed. Green economy includes three main areas. The first sector is an advocacy of macro-economic approach to sustainable economic development on national, regional and sub-regional level. Second, the green economy focuses on green finance access, investment and technology. Lastly, promoting transition on macroeconomics policy to a green Economy system for countries (UN Environment Programme, 2023).

Urban Good Governance in Green Economy

Good Governance in the field of green economy in cities can be measured in four dimensions and four specific indicators (Puppim de Oliveira et al. 2013). The first dimension is *the decision-making process*, which contains the process on how decisions on the cities are made. The process in making green-economy policy should consider all the interest levels. The decision makers are responsible for the decisions in this process. The second dimension is *implementation capacity,* which evaluates the capability of the organization, government and non-government to implement the decisions. This dimension also includes a flexible governance structure that focuses on creating a green economy and implementation mechanism of the program or decisions. The third dimension is referred to as *the green economic system* which observes the consumption activity of the city and how the government facilitates the green economy ecosystem in the cities. The purpose of observing consumption activity is to measure the impact of green economy activities in one city to other cities. The last dimension is the *social-ecological system*, which assesses the change of social-ecology aspect in cities.

This dimension is the last step after the implementation of the green economy system. This dimension is important to evaluate the goal of the green economy system's implementation. The goal is intended to be able to fulfill the Sustainable Development Goals (SDGs) which includes poverty alleviation, cleaner energy, and others.

Table 1: Concept Operationalization

No	Dimension	Definition by Puppim de Oliveira et al. (2013)	Activities
Decision and implementation capacity			
1	Decision-Making process	The process of decision-making in setting a policy of green-economy. The policy should be inclusive (considers all the interest levels)	Whether or not there is an effort of Surabaya city to put out the policy which is inclusive of managing the urban spatial planning, improving the capacity and quality of public transport and facilitating the citizen to walk or cycle, building an agriculture sector in cities and improving the human resources to implement a green economy ecosystem.
2	Implementation Capacity	The capacity or performance of organization and government or non-governmental actors in executing green-economy policy.	By seeing the policy of Surabaya City, the researchers see an effort of Surabaya to improve and support the performance of the department in Surabaya on managing the urban spatial planning, improving the capacity and quality of public transport and facilitating the citizen to walk or cycles, building an agriculture sector on cities and improving the human resources on implement green economy ecosystem.
Green economy and socio-ecological dimensions (outcomes)			
3	Green Economy System	Impact of the green economy system on other cities.	By seeing the policy of Surabaya City, the researchers see an effort of Surabaya city to measure or the feasibility to implement the policy in other cities of East Java to implement a green economy-based system. This includes, but not limited to, improving resources management, improving the capacity and quality of public transport and facilitating the citizen to walk or cycle, build agriculture sector in cities, and improve the human resources to implement a green economy ecosystem.
4	Socio-ecological System	The purpose of the green economy.	By seeing the policy of Surabaya City, the researchers see the purpose of Surabaya green-economy cities in other cities on design the building of the city densely, improve the capacity and quality of public transport and facilitate the citizen to walk or cycles, build an agriculture sector on cities and improve the human resources on implement green economy ecosystem.

There are four key aspects to assess those dimensions. First is the transformation *of space: urban development*, which means that a city should layout the construction and building sector correctly in order to decrease the use of energy. It means that the construction and building should be designed densely, so it will decrease the energy which is needed for transportation. The second aspect is *Circulation: trade and transportation* which means the circulation of trade and transportation should be efficient. There are three methods to make it efficient; (1) Improving capacity and quality of public transportation to reduce the use of private transportation, (2) promoting eco-friendly transportation, (3) promoting and facilitating the citizen in cycling and walking. Third is the *consumption and production in cities*, which means that the cities should be more productive in managing sustainable consumption of citizens by promoting and building an agriculture sector in the city. The last aspect is, *ecosystem, social and knowledge services* which means the service bodies such

as organizations, communities and government should support the implementation of the green economy. The implementation includes knowledge management of the ecosystem and for the human resources. The availability of higher education institutions would help the implementation of this indicator. To go beyond the decision-making procedures and include the capacity to implement change, the results of greening the economy and final outcomes on the ground (Table 1).

Research Methods

This research uses qualitative approaches, a flexible research design which is driven by the data. This approach helps this paper to analyze the issue through the framework in detail (Hammersley, 2013). This paper used case study research design, which the method allows a case in-depth analysis whereas researchers collect information in a structured detail form (Creswell, 2013). The writer uses these approach in order to do in-depth study of particular case try to find patterns of the occasion (Hammersley, 2013). In this case, researcher will try to find the partener based on the four dimensions of urban good governance economy. This paper is a descriptive research. This method is used to describe the process and allows data from program implementation, so this research can be used as a reference for the development of the specified theory or concept. This type of research is intended as an improvement of the specified program (Nugrahani, 2014). The data used in this study is primary and secondary data collected from documentary research and internet based research. The primary data is retrieved from various official offices and governments' official databases. Documentary research covers the data from memorandum, institutional report, statement form government, census publication and official statistic from government. Documentary research technique is used in investigating and categorizing written documents that are available privately or publicly (Ahmed, 2010). Meanwhile, internet based research is a data collection technique through internet include, online survey, web content analysis, FGD video conferencing, e-mail or blogs (Convery and Cox, 2012). Specifically the researchers *web page content analysis*, the data collection technique through content on government official web or partners. This technique will help the researchers to complete and ease the data collection process.

The data analysis process that is used by the researchers is thematic analysis techniques. This data process is used to analyze qualitative data that is collected from documentary and internet based research. This technique's purpose is to identify the patterns to a specific concept. This technique is compatible with this study because it can help the researchers to identify the patterns of the city to specific concepts (Heriyanto, 2018). There are three stages in analyzing the data through this type of technique. First, understanding the data, in this phase, after collecting the data the researchers will read all of the data and try to comprehend them. In this phase, the writer will read the whole data taht related to green economy city framework in Surabaya. Second, compiling code, in this phase the researchers assign the code on all of the data then categorizing them. In this phase, researchers will agglomerate the data which include the dimensions of green-economy cities development. Then, find the theme or characterize the data. In this phase the researchers should subsume the data to the main concept that has been chosen. On this step, researchers will characterize the data that has the code with the main concept.

Result and Discussion

In this part, the researchers will explain the general condition of surabaya then analyze the development of the green economy in Surabaya. Researchers then will give the results by mapping the strategy to Surabaya in developing a green city economy into the table. After

that, researchers will tell the strategy to implement the green economy that can be realized in cities of East Java.

Surabaya Conditions and Green Sister City of Surabaya - Kitakyushu

It needs to be understood first the condition of Surabaya, both right now and when the Green Sister City was first established, as well as what was Surabaya's problem this policy aimed to solve. The result of this cooperation are required to analyze the Green Sister City through the dimensions of Green Economy, which is evaluated through existing research (Kurniawan et al., 2013; Nuralam, 2018; Widiana & Utomo, 2021; Octavia, 2017; Ummah et al., 2022; Fauzia, 2021; Dai, 2018; The Japan Ministry of The Environment et al., 2015). Currently Surabaya has around 2,88 million population and population density of 8.633 people/km2 (Badan Pusat Statistik Kota Surabaya, 2023). This number is actually lower compared to 10 years ago when the Green Sister City was first established. At that time, Surabaya had around 3.12 millions inhabitants and the density of 8.300 people/km2 (Badan Pusat Statistik Kota Surabaya, 2013). The reason for the current lower number of population compared to 10 years ago is presumably due to the pandemic that significantly impacted Surabaya's demographic. This information is a gateway to understand some causes of environmental problems that were Surabaya's biggest concern 10 years ago. The current Surabaya has improved a lot, environmentally, compared to 10 years ago. Not because of the lower population number, but also the increasing efforts to solve environmental concerns.

Surabaya had a lot of environmental concerns at that time. There was a high increase of population due to both urbanization and increasing birth rate, which caused overall higher waste and higher volume of vehicles that cause pollution (Fauzia, 2021; Kurniawan et al., 2013). This also caused a waste management problem due to the closure of Keputih landfill, less than 30% of waste generated is disposed to open dump which caused an increase of water & land pollutants, that led to wastes and garbages scattered around the city (Widiana & Utomo, 2021; Nuralam, 2018; Kurniawan et al., 2013). These matters then led to massive water and waste flooding in Surabaya. If it was not properly solved, the city could face a serious environmental and urban problem in which there would not be any land left to dispose of the waste. The wastes were dominated by organic and food waste, reaching 60% of the wastes, thus there was also a need to search for a specific method that was able to properly decompose those wastes (Kurniawan et al., 2013). Surabaya sought a cooperation with Kitakyushu city to solve the waste management problem because Kitakyushu had a similar problem in the past and managed to overcome it, even known as a city that successfully implemented Low Carbon City-Society concept. The cooperation includes an integration of concepts, which are waste management and low-carbon city development in 2012, water management in 2013, green city development in 2014, drinkable-water management and production in 2015, energy management in 2016, prevention of dengue in 2017, mangrove conservation and eco-tourism development in 2018 (Ummah et al., 2022). Among the results of this program are products and projects such as the use of Takakura Home Composting device & 3R (Reuse, Reduce, Recycle) principle for waste management, water-purifier technology transfer, and conservation of mangrove forests.

Analyzing Surabaya Through Green Economy Dimensions

In this section, researchers will analyze the government of Surabaya with four dimensions of green economy development concept. Researchers will organize the data based on the dimension then explain it based on the dimensions and indicator on concept operationalization.

Decision-Making Process

In this dimension, researchers assess Surabaya in the fields of green economy context by seeing the policy that the government made. There are two steps that researchers will take. First, the researchers will explain the mission of Surabaya City on Regional Medium Term Development Plan (RPJMD) which is referring to green-economy cities development. This step is aiming to sort the Surabaya policies on RPJMD which focus on green-economy development. Then, the researchers will observe whether Surabaya's policy direction and strategy is based on a green-economy city or not. The researchers will also analyze the things that needed to be improved by the government to make Surabaya a green-economy city.

Surabaya's RPJMD 2016-2021 focuses on seven strategic issues that were listed on Surabaya's RPJPD 2005-2025. Three of the issues refer to green-economy cities development. The issues are, global warming and development ecology based, management of water resources, infrastructure and settlements, forestry, agriculture and marine coastal areas in a sustainable manner and the competitiveness of local products, product efficiency, trade infrastructure. All of these issues refer to Surabaya's mission and strategy. The first mission is managing urban spatial planning and infrastructure which has several specific targets. The targets are focusing on facilitating the mobility of the city, simplifying in developing the infrastructure, improving the disaster management and city drainage system, and increasing energy savings in Surabaya. The second mission is improving the integration facilities on trade through the implementation of city logistic management. This mission has some specific targets, which are improving productivity of the agricultural sector, supply of food commodities, tourism attraction and investment in Surabaya. The last mission of Surabaya referring to green-economy cities is managing urban spatial planning and infrastructure and improving environment infrastructure. This mission focuses on improving the regulation and management of the residential environment, reducing the potential of slum areas and increasing energy conservation (Pemerintah Kota Surabaya, 2016). Then, this policy will be continued by RPJMD 2022-2026.

Next, Surabaya's RPJMD 2022-2026 has a total of five missions, whereby three of those missions are referring to green economic city policy. The first mission is realizing an inclusive economy to increase people's welfare and strengthening economic independence locally. This mission has two purposes which are developing the strategic sector and improving investment in Surabaya in order to reduce poverty. The second mission is increasing the quality of human resources to be more productive by improving the quality of education and other needs. This mission has two aims, which are improving the quality of human development and creating the character of society to be more aware in maintaining the environment. The last mission is intensifying integrated urban spatial planning through the availability of modern, world-class and sustainable urban infrastructure. This mission focused on structuring the layout of the city with the aim of infrastructure development and improving environment quality (Pemerintah Kota Surabaya, 2021).

Through Surabaya's RPJMD researchers can analyze the four aspects of green-economy cities in these dimensions. First, transformation *of space: urban development,* on RPJMD 2016-2021 and 2022-2026 Surabaya has already put this indicator on the mission. Surabaya also put the target refers to the environment and development of infrastructure in order to create an inclusive economy through managing the urban spatial city . Not only that, on RPJMD 2016-2021 Surabaya has a target to facilitate the mobility of the city through the urban spatial planning. The policy that Surabaya made through the mission is suitable according to

this indicator. Surabaya considers some aspects such as mobility in the city, inclusive economy, infrastructure development, and increasing the quality of air and environment. It proves that surabaya has completed urban spatial indicators on decision - making dimension. Second, *Circulation: trade and transportation*. This Indicator is not as standing out as the first indicator. Surabaya did not explicitly put this indicator on the mission of RPJMD. However, Surabaya had already put this indicator on the target of the mission. Surabaya considers the integration of transportation through urban spatial planning. Surabaya also considers energy efficiency through the integrity of transportation. Nevertheless, the researchers still cannot see the effort of Surabaya in improving the facilitation of the society to walk and cycle through the mission of RPJMD. Whereas, the easiest step to use the energy efficiently is to facilitate the society to walk and cycle. Besides, this method is cheaper than using eco-friendly transportation. Surabaya only focuses on how to create a healthy environment and how to use the energy efficiently through integrated and eco-friendly transportation and abandon the easiest way to get the purpose. So, Surabaya has to improve in creating a society to use energy efficiently rather than only create the infrastructure of the eco-friendly transportation itself.

Third, *consumption and production in cities*. By seeing the RPJMD 2016-2021, Surabaya put this on the target of the mission. Surabaya is considering improving the agriculture sector in order to increase the supply of food. It proves that surabaya is trying to complete the consumption needs of local people. Surabaya also tries to improve productivity with the aim to develop the export sector. But unfortunately, this target cannot be seen on RPJMD 2021-2026. Agriculture and food productivity is not the focus of Surabaya missions. However, Surabaya realized that the agriculture sector is an important international issue which is listed on *Sustainable Development Goals* (SDGs). Surabaya also recognizes that the lack of agriculture production and distribution is one of the weaknesses of Surabaya. Therefore, Surabaya should improve this kind of policy, because agriculture is one of the most important indicators. Agriculture will help the city to create an inclusive economy and improve the food production so that surabaya becomes a green-economy city. The last indicator, *ecosystem, social and knowledge services*. Surabaya has already put human resource development explicitly on the mission of RPJMD 2021-2026. Nevertheless, Surabaya has not focused on green-economy development in improving the human resources. So, it would be better for Surabaya to consider green-economy aspects in increasing the human resources because it will help Surabaya in implementing the inclusive economy, reducing poverty and using energy efficiently.

To sum up, researchers found that Surabaya has already put some focus in implementing the green economy city development. By seeing the policy direction, Surabaya has completed one aspect which is on urban spatial planning. However, Surabaya should be more focused in making the policies, in facilitating the society to walk and cycle, improving the production of agriculture and putting more attention on improving human resources in the context of green-economy.

Implementation Capacity

On implementation capacity dimensions, researchers will analyze the effort of the department in Surabaya in completing all aspects of green-economy cities development. Researchers will observe the policy direction of the department which is involved in green economy development based on the indicator. This thing is needed to see whether the other actors of government support the green economy city or not. The explanation will be divided based on four indicators. On every aspect, researchers will try to observe whether

Surabaya's department policy direction and strategy is based on a green-economy city or not. The researchers will also analyze the things that needed to be improved by the department to make Surabaya a green-economy city.

First, the transformation *of space: urban development*. Surabaya has *Dinas Perumahan Rakyat dan Kawasan Permukiman* (DPRKPCKTR) or Department of Public Housing and Residential Areas. This department is in charge of organizing the space in Surabaya including, preventing the slums in Surabaya and managing the building space. This department has four subcoordinator, the field of spatial planning, buildings, housing and settlements as well as procurement of land and traffic infrastructure (Dinas Perumahan Rakyat dan Kawasan Permukiman (DPRKPCKTR) Kota Surabaya, 2021). It is good because Surabaya proves that they have coordination with traffic infrastructure through the subcoordinator of the department, but unfortunately there is no specific subcoordinator that manages green-cities spatial building. Whereas, it is really important to take the first step through this department in order to realize the mission in using the energy efficiently and make Surabaya a green-city economy. Besides, green-cities principles in this department can increase the green-building in Surabaya. However, based on Strategic Planning of DPRKPCKTR 2021-2026, layout of Surabaya is already based on energy saving and environmental maintenance, but it also needs a further and specific policy that refers to green-economy cities development. In Brief, the capacity and planning of this department is suitable with the mission of RPJMD, but not implementing the green-cities development principle at all. The current Surabaya is in an effort to save energy and maintain the environment but forget about managing the department to organize and boost the green building in Surabaya.

Second, *Circulation: trade and transportation* which means the circulation of trade and transportation should be efficient. In managing all transportation, Surabaya has *Dinas Perhubungan* or Department of Transportation. Based on Department of Transportation's Strategic Planning 2021-2026 there are four subcoordinator under this department, infrastructure and transportation, traffic, public transport, as well as supervision and control (Dinas Perhubungan Kota Surabaya, 2021). The fact that this department put the public transport in, one of subcoordinator is suitable with this aspect. Because, it proves that Surabaya gives more concern in developing public transports in order to use the energy efficiently and reduce the air pollution. Nevertheless, the targets and policy that this department tries to implement is not suitable with green economy cities development, even with the vision of the department and mission on RPJMD. The vision of this department is *Towards Quality and Sustainable City Transportation*. Nonetheless, the goals, and policies none of which lead to sustainable or eco-friendly transport. To conclude, Surabaya through this department had already managed the policy to improve the public transports but there is no effort to implement sustainable transport or support no-motorized transport in the city.

Third, *consumption and production in cities in* Surabaya. In organizing food security and agriculture Surabaya has Dinas Ketahanan Pangan dan Pertanian or Department of food security and agriculture. This department has four subcoordinator, food, fisheries, animal husbandry, and agriculture (Dinas Ketahanan Pangan dan Pertanian Kota Surabaya, 2021). The fact that Surabaya has this department with those subcoordinator is very suitable with this indicator or aspects. Because, it proves that Surabaya has an effort to fulfill the consumption of its citizens. This indicator is very important, because developing an agriculture sector in the city helps the realization of economic heterogeneity. Not only that, it also opens the air space in the city. In line with the name of this department, the program is very suitable with green-economies cities development. Based on strategic planning, this department is trying

to increase the productivity of agriculture , animal husbandry and fisheries. This department also try to improve the quality of food in surabaya. So, through this department and the programs, Surabaya is very suitable in this indicator because it considers the productivity and quality of agriculture and food.

Lastly, *the ecosystem, social and knowledge service* aspects in Surabaya. The department above, proves that Surabaya has a concern in managing the city into a green-economy city. There is no specific department that manages the cities into a system of green -economy city development, but there is one department who focus on organizing the environment, that is Dinas Lingkungan Hidup or Department of Environmental Services. This department is trying to overcome the pollution and waste issues in Surabaya. This department also tries to maintain the biodiversity in Surabaya (Dinas Lingkungan Hidup Kota Surabaya, 2021). This aspect cannot be used only with this department but with the integration of all departments to make the city towards green-economy cities. In brief, there is an effort by Surabaya to build the right ecosystem to realize the green-economy cities.

In this dimension, researchers found that Surabaya has a good capability in implementing green economy development. By seeing the policy direction of the department, it proves that Surabaya had already taken the step to make the city into a green economy city. However, still there are several things that has to be improved through the capacity of department in implementing Surabaya as the green-economy city, such as the policy of transportation department, the policy to improve the amount of green-building and the policy to reduce the motor-transportation in Surabaya.

Green Economy System

This dimension aims to assess the change in the economic system of the city by perceiving how the 'greening process' happens (Puppim de Oliveira et al., 2013). Aside from the four key aspects mentioned above, there are three indicators within this dimension to analyze Surabaya green-economic city development, which are (1) *Resource use efficiency*; (2) *Responsible Consumption*; and (3) *Internalization of externalities*. The implementation includes knowledge management of the ecosystem and for the human resources. The availability of higher education institutions would help the implementation of this indicator. The methods inside the four aspects; (I) *The* transformation *of space: urban development*, (II) *Circulation: trade and transportation,* (III) *Consumption and production in cities*, (IV) *Ecosystem, social and knowledge services*, will be integrated in the analysis of three indicators of this dimension. The integration will be reflected in the examples of Surabaya's efforts that are in line with both four key aspects of the green economy and the three indicators of this dimension. Through the analysis below, the researchers have found that the green-economy system in Surabaya can be regarded as a good system, but still needs some additional efforts and continuation.

The indicator (1) of 'Resource use efficiency' involves efficiency and management of available resources, more importantly primary resources such as water, electricity, and energies. The efforts of the Surabaya government here are; First, starting with delegating a government staff to learn water and waste management & treatment directly in Kitakyushu to later apply in Surabaya (Dai, 2018). Second, realization of water resources management, such as the government through Sarinah Cooperative receiving water-purifier machines to increase drinking-water supply from Ishikawa Engineering, resulting in a much cheaper water compared to drinking water in the market (Dai, 2018; KabarGress.com, 2016). Third, the development of a waste disposal center named Super Depo Sutorejo in 2013, which is based on the 3R (Reuse, Reduce, Recycle) principle and the use of Takakura Home Composting method that

utilize fermentation of waste that was proven to be able to reduce waste at Sutorejo region by 50% by its ability to manage 20 tons of waste in a day (Octavia, 2017; Fauzia, 2021). Takakura Home Composting method itself is an organic waste composting method that is characterized by its simple methodology, rapid waste decomposition, and low energy consumption, that can be used in both household and large market waste levels (Kurniawan et al., 2013). According to Surabaya's Government (2022) from SatuData database, there are at least eight 3R-based waste disposal centers in Surabaya currently that overall can take more than 80 tons of waste in a single day. Lastly, a business-to-business cooperation between Indonesia's Sumber Organik Ltd. and Japan's Hitachii Zosen Corp. & NTT Data Institute for the realization of an organic waste-sourced electricity power plan which was realized as the first waste-sourced power plan in Indonesia, which is located in Benowo, Surabaya that has operated since 2020 (Dai, 2018; Laily, 2020). There was an effort to socialize the use of Takakura composting to households, however, the amount of its use in households is way too less compared to the increase of factors such as waste. This indicator also asked for the integration of green architecture and eco-friendly building design in urban building, including housing. However, this integration is still lacking in Surabaya.

Indicator (2) which is 'Responsible Consumption' means a reduction of consumption and whether the consumption is truly controlled internally or just exporting the environmental burden to other places. The Low Carbon City Planning Project aspect of the Green Sister City includes actions to reduce consumptions such as; first is the plan to develop more public transportation to reduce the CO2 volume from transportation vehicles, second is using waste as raw materials for cement plants production to reduce non-renewable material usage in cement production, and the third is focusing effort in energy saving mechanisms for hotels and industries (The Japan Ministry of The Environment et al., 2015). The problem in this indicator however, is Surabaya's tendency to implement policies that solve a problem rather than to prevent the problem. For instance, the campaign to implement the takakura home composting method in households was there, but the campaign in reducing food waste itself per-individual is little to none. Here, Surabaya's policy tends to be created when the problem is already too much, rather than preventing the problem from escalating further.

The indicator (3), 'Internalization of externalities' means the capability of a city's government to provide incentives for activities and projects that support the transition to a green economy system. The efforts are; First, active international participation of Surabaya's government in environmental-oriented conferences and cooperations to prove their commitment in 'greening' the city, such as in *OECD Mayor's Forum: Urban Green Growth in Dynamic Asia 2013* and *The 3rd International Forum on The 'Future City' Initiative in Kitakyushu* (Widiana & Utomo, 2021) and visitations exchange between two cities. Second, the increase of budget allocated in supporting Green Sister City program, for example the Environmental Destruction and Pollution Management Program budget allocated in Surabaya's Local Government Budget 2014 was IDR 12.028.894.368,00, meanwhile in 2016 it became IDR 12,260,080,819 (Pemerintah Kota Surabaya, 2014; 2016). Third, the development of renewable power plans which are a total of 76 government-funded renewable energy-based power plans across the city consisting of 1 waste-based power plan, 8 wind-based power plans, 4 Off-grid solar panels, and 63 solar cells up until 2021 (Dinas Perumahan Rakyat dan Pemukiman serta Pertanahan Kota Surabaya, 2022) Lastly, developing human resources to handle the mechanisms enacted for the Green Sister City project, for example sending delegations for various training in waste management, water management, low-carbon city concept, measurement method for carbon emissions, and others (Dai, 2018).

Surabaya may have either efforts or policies that can reflect each indicator in the dimension, however, the most important thing in a green economy system is the willingness and mindset of people so that the system can actually be implemented in their daily lives. Yet, Surabaya lacks exactly that. Thus, Surabaya;s efforts need improvement while also continuing what has been done.

Socio-ecological

The fourth dimension assesses changes in socio-ecological indicators, reflecting the results on the ground (i.e. whether the three first dimensions have led to good socio-ecological outcomes), which is important to evaluate whether the "greening of the economy" is leading to sustainable development and poverty eradication (Oliveira et al., 2013). This dimension includes three indicators, which are; (1) *Resource Conservation*; (2) *System Resilience*; and (3) *Human well-being.* The process analysis of this dimension is similar to the third dimension in which the methods inside the four aspects; (I) *The* transformation *of space: urban development*, (II) *Circulation: trade and transportation,* (III) *Consumption and production in cities*, (IV) *Ecosystem, social and knowledge services*, will be integrated in the analysis of three indicators of this dimension. The integration will be reflected in the examples of socio-ecological impacts that are in line with both four key aspects of the green economy and the three indicators of this dimension. The researchers have found that the social impact of Surabaya's efforts are not yet significant even though it is the prerequisite of a system to be sustainable. Compared to the social impact, the ecological impact is more prevalent and needs consistency.

Indicator (1) 'Resource Conservation' refers to the result of actions indicated to preserve existing resources and environment, for example, the amount of green spaces in a city and decrease of natural resources use/exploitation in the city. First is the result of renewable-based power plans, as the waste-based power plan in Surabaya has the capacity to manage 1600 tons of waste a day and the solar panels can generate 3000 watt maximum on average (Dinas Perumahan Rakyat dan Pemukiman serta Pertanahan Kota Surabaya, 2022; Safi & Ekowanti, 2022). The study conducted in some hotels and shopping centers by a joint-team from Japan also found the potential of CO2 emission reductions by 5,600 t- CO2/year, which is a very significant amount (The Japan Ministry of The Environment et al., 2015). Surabaya also has massive efforts in creating green open spaces, such as increasing the amount and enlarging the city's green parks, green belts, and forest parks that include mangrove forests. Currently, there are 8 forest parks, 33 green belts, and 38 city's green parks, and development of mangrove forests as ecotourism spots that are managed by the local communities, all green spaces' width total is 7.290,53 hectares in 2019 (Dinas Ketahanan Pangan dan Pertanian Kota Surabaya, 2022; Dinas Lingkungan Hidup Kota Surabaya, 2023; Idajati et al., 2016; InfoPublik, 2019). The opening of Green spaces has aided Surabaya in achieving its goal to decrease the city's temperature even before the pandemic, which was from 30-31 degrees celsius to 28-29 degrees (InfoPublik, 2019). All these efforts were done to support the Low Carbon-City concept integrated in the grand scheme of Green Sister City and fulfilling the Surabaya Green City Masterplan.

Indicator (2) 'System Resilience' means the existence of factors which determine the sustainability of the system, the factors include the consistent increase in the amount of green-transition efforts and a system that has the capability to face existing challenges. As explained in the third dimension, Surabaya has fulfilled all the indicators of the green economy system that pertains to the characteristics of a sustainable system. For example, the waste disposal center was started only with one center development which is Super Depo Sutorejo

in 2013, but the increase in the number of waste disposal centers and composing houses was consistent. In 2013 - 2019, there is at least one 3R waste disposal center or composing house being built in Surabaya (Dinas Lingkungan Hidup Kota Surabaya, 2022). System resilience also includes quality and quantity of human resources so that the system is able to properly work. In 2013, there were at least 27,000 people actively involved in 450 environmental facilitators to both educate households in using Takakura method and advocating cleaner environment (Kurniawan et al., 2013). However, the current system's resilience is pretty questionable, due to lack of apparent steps and efforts in times after pandemic recovery. The current efforts in maintaining the resilience of the green-economic system are not as hard as 10 years ago. The environmental concerns have indeed decreased in Surabaya, but, there were lots of projects halted due to the pandemic that are still lacking or limited in its continuation. For instance, the limited continuation from Surabaya's government in mangrove forests research and development of ecotourism. In 2022 there was a Non-Governmental Organization (NGO) *LindungiHutan* in Surabaya that conducted a campaign of mangrove plantation (Iqbal, 2022), but the role of Surabaya's government is not apparent in this campaign.

Indicator (3) refers to improvement of overall human well-being, including but not limited to increase of jobs & income for the poor, proper living environment, and general health improvement. 3R Waste disposal centers, the waste-based power plans, and the management of mangrove ecotourism have opened more job fields especially for people under poverty and the local communities. The green spaces also contributed in reducing the city's temperature by 2 degrees celsius, and the Surabaya government targeted to keep on adding green spaces to achieve an ambitious goal which is reducing temperature to 22 degrees celsius (Muhammad, 2019). The temperature decrease would reduce the risk of Surabaya from suffering heatwave in summer, which is helping to improve the comfortability of people and preventing crops from dying due to heat.

This dimension assesses both social and ecological effect, Surabaya has done pretty well in creating better ecological impact, but very lacking in the social effect. It may be true that environmental education is more intense than ever, but the implemented knowledge of environmental education should focus on prevention which is still not visible in Surabaya's environmental campaign. The current education still can not affect the consumption of Surabaya, thus there is no decrease at all in consumption which means waste is still increasing to this day. This matter is very important as it determines the success of green policies, and it is in particular what needs to be improved the most for Surabaya.

In order to map the strategy of Surabaya on becoming a green economy city, the researchers have already managed the table below. The table can describe what should be done by Surabaya in developing green economy cities. This table can help Surabaya in evaluating the policies and implementation based on four dimensions and four aspects to drive the city better than before.

Table 2: Surabaya Green Economy Strategy

No	Dimension	Transformation of space: urban development	Circulation: trade and transportation	Consumption and production in cities	Ecosystem, social and knowledge services
1	**Decision-Making Process**	**Suitable**: Surabaya has a specific mission on RPJMD for managing the space in the city.	**Needs Improvement**: Surabaya does not have any strategic plan to grow the walk and cycle culture.	**Needs Continuity:** Surabaya should put agriculture and food in the mission.	**Needs Improvement:** Surabaya does not have any policy in developing the human resources in the fields of green economy cities, however, still there is an effort by Surabaya to build a green economy city system.
2	**Implementation Capacity**	**Needs Improvement**: The Departement does not have enough regulation to increase green-building.	**Needs Improvement**: There is no a program or a target that refers to sustainable transportation on Department of Transportation strategic planning.	**Suitable:** The distribution of subcoordinator and policy of Department Food Security and Agriculture Is suitable to fulfill the citizen's consumption and build a green-economy city.	**Needs Improvement**: Some departments in Surabaya have done the little step to make Surabaya become a green-cities, nevertheless all of this should be integrated and improved by the main policy (RPJMD).
3	**Green Economy System**	**Needs Continuity:** The building of 3R-based waste disposal centers and a waste-based power plan is a significant progress in solving urban planning problems, but still needs more of those. Integration of eco-friendly design in urban buildings is still not apparent.	**Needs Continuity:** Surabaya always increases the amount of public transportation every year, but no significant increase in pedestrian and cycling roads.	**Needs Continuity:** There are systematic efforts to reduce energy consumption for industries and tourism sites. There is also a city-wide plastic ban, but very little effort in reducing the biggest waste concern, which is organic waste.	**Suitable:** Surabaya government has proper departments assigned to develop the green city scheme, as well as collaborating with various actors. This includes the creation of the green sister city with Kitakyushu, partnership with private entities, and collaboration with NGOs and civil society.
4	**Socio-ecological**	**Needs Continuity:** Opening of Green spaces have contributed to the decrease of the city's temperature and CO2 in air, however the use of renewable-based power plans, like solar cell, is still not popular for households.	**Needs Improvement:** The community still lacks awareness to walk and cycle rather than using polluting vehicles. The increasing public transport does not contribute to changing the mindset of society in reducing the use of vehicle to reduce pollution.	**Needs Improvement:** there is very little awareness in society to reduce organic waste, plastic ban also does not entirely change society's mindset about the use of plastic.	**Needs Continuity:** More people are joining environmental organizations and waste management training, but the overall effort to shift the majority of the society's mindset is still not working very well.

Green Economy Strategy for Cities in East Java

After mapping, evaluating and formulating the strategy to Surabaya in developing the green economy cities, researchers can also find the strategy on developing the green economy in other cities in East Java. There are three strategies to become a green economy cities development.

Understanding Local Context and Search for Partnerships

Surabaya is one of the biggest cities in Indonesia which conditionally supports the ideas of developing green economy cities. However, even in the same province, not every city has the same capabilities to develop the strategy as Surabaya. Therefore, it is important to consider the local characteristics of the city first, such as the society, environment, culture and other things which probably can affect the process of development. Choose the right strategy and timing to develop the city into a green-economies city. Recognizing different local contexts is maybe one matter that becomes a wall between cities in cooperating similar policies, however, understanding those differences is also one step closer in creating a comprehensive and inclusive strategy. After understanding the city properly, the government can find the right partnership to help the process. The lack of capabilities of the government in some aspects will hamper the development. So, it will be better if the government can find the right partnership which can support and complete those kind things. The partner can come from private sector or even international partners, like the sister-city of Surabaya - Kitakyushu. The improvement of Surabaya was massive, from a city that has a terrible waste problem to a city that is recognized as a well-maintained green city. It is in line with the concept which says that the capacity of the actor is important in implementing the policies or promoting the process of green economy city development (Puppim de Oliveira et al., 2013). The actor in this context is the same as 'partner'. In brief, before the government or the city go too far in developing the green economy city, know better about the city and find the mitra to perfect the plan and process.

Policy and Capacity Development

The stage of Policy and Capacity Development's purpose is to determine what strategy can be used to improve policy-making and the capacity of cities to implement green-economic policies. This can be done through few things, for example, Policy Transfer in city-to-city (C2C) cooperation and/or adaptation of aspects within a certain policy conditioned to the city's own need. There are few conditions that need to be met to execute those things. One of the ways, Policy Transfer, is the process whereas knowledge of policies, institutions, administrative arrangements, and ideas in a political system is used in another (Shefer, 2019). Shefer identifies that Policy Transfer can be conducted when there is a substantial gap in climate policy making, both in similar or different local conditions. The conclusion of Shefer's research was that the need for extensive learning and research of related-policy's elements, similarities of problems, and existence of motivation for the city that intend to adapt the whole or certain elements of the policy.

In terms of motivation, many cities and regencies of East Java Province already have the willingness to improve their environmental policies which are also leaning to the green-economic policies concept. Below are two tables, the first table is of projects and policies that indicate the willingness of cities and regencies throughout East Java to develop a green economy-oriented policies. The second table maps environmental concerns between cities and regencies of East Java in which similarities are found.

Table 3: East Java Cities and Regencies' Projects, Policies, and Cooperations

No	City / Regency	Policies, Projects, and Cooperations
1.	Malang City	- Bank Sampah Malang, a 3R- based Waste Management. - Existence of Sister City Malang - Fuqing, but only in the trading sector. (wahyudi et al., 2020)
2.	Malang Regency	- Government went to Denmark to study the Biogas Plant, a method to recycle organic waste to biogas. - Cooperation with the Danish Environmental Protection Agency (DEPA) for managing organic waste. (Dinas Lingkungan Hidup Kabupaten Malang, 2022)
3.	Probolinggo Regency	- Workshop on Management of Environmental Damage and Pollution for Industries 2022. (Dinas Lingkungan Hidup Kabupaten Probolinggo, 2022)
4.	Probolinggo City	- Symbiocity cooperation toward the development of Green City with Helsingborg in waste & pollution management and environmental friendly school (Sekolah Adiwiyata) in 2013. Discussion of the Green City project continued in 2021, the project started with the Bike to Work Program. Probolinggo Mayor also stated his interest in management of a waste disposal center that is being offered by Verapark, Swedish (Badan Perencanaan Pembangunan Daerah Penelitian Pengembangan, 2013; Pemerintah Kecamatan Kademangan, 2021). - Some countries are offering Sister City cooperation to Probolinggo because the city won the We Love City Competition (Fakhrudin, 2022).
5.	Banyuwangi Regency	- Multi-cooperation Tamansari Village of Banyuwangi with Clean Oceans Through Clean Communities (CLOCC), Avfall Norge (Norway-based Recycling and Waste Management Organization) which is also supported by Norwegian Agency for Development Cooperation to develop a community-oriented waste management and activation of 3R-based waste disposal center (Pemerintah Kabupaten Banyuwangi, 2021).
6.	Lamongan Regency	- Lamongan government's support toward Greenhouse Hydroponic Farming (Dinas Komunikasi dan Informatika Provinsi Jawa Timur, 2022). - Develops Samtaku (Sampahku Tanggungjawabku) as waste management program and received Green Leadership Nirwasita 2021 (Pemerintah Kabupaten Lamongan, 2021).
7.	Sidoarjo Regency	- Sidoarjo Mayor met the Swiss ambassador to discuss the greenhouse effect and city waste management (Sholahudin, 2022).
8.	Pasuruan Regency	- Built two facilities of 3R-based waste disposal centers which was, funded by Nestle, Borealis, Norway Government, Nova Chemicals, Borouge, Siegwerk. The project is called the Project Stop (Setiawan, 2021).

From the table above, it can be concluded that cities and regencies of East Java have conducted some green economy-oriented programs, including ones that sought for international partnerships and cooperations. Therefore this table can prove the motives of those cities to go toward the direction of the development of a green-economy city. The second table below will consist of green economy-related concerns in those cities as well, in which this research finds similarities and shared-problems.

Table 4: Green Economy-related Concerns

No	City / Regency	Concerns
1.	Malang	There are waste management problems, a concern toward the environment due to unmanaged waste for both organic and inorganic waste, relatively small amounts of waste that is managed by Bank Sampah, and limitation of human resources capability, knowledge, and awareness (Wahyudi et al., 2020).
2.	Probolinggo	Problem of waste management, society awareness toward waste management, and mis-targeted facility development that caused further environmental harm (Syahwan, 2022; Salam, 2022).
3.	Banyuwangi	Population increase causing waste increase, industry pollutant increase, negligent industry toward waste management, and limitation of both human resources and land availability to manage the wastes. (Dwinugraha, 2016).
4.	Lamongan	Population and industrialization increase cause uncontrollable waste disposal, high risk of flood, limited land as waste disposal (Mahardika, 2018)
5.	Sidoarjo	Increase of waste and garbage control service-fee and limitation of land for waste (Duta.co, 2023).
6.	Pasuruan	Heaps of waste in Pasuruan's coastal area (Armanto, 2022).
7.	Tuban	Severe waste pollution at coastal area and sea (Ranggalawe, 2021; Marfis, 2019).
8.	Trenggalek	Severely Polluted river due to unmanaged waste from fisheries industry (Laily, 2023; Muttaqin, 2018).
9.	Tulungagung	River polluted with microplastic, high risk of flood due to decrease of forest (Sururi, 2021; Wicaksono, 2022)
10.	Bojonegoro	disproportionality of waste that able to be controlled and the one that is not, flood risk, polluted river (Kuncoro, 2022; Santoso, 2021)

It can be concluded from the table above that there are indeed some shared problems and concerns between cities of East Java, particularly on waste management due to limitation of tools. This conclusion can inquire about many things, including a cooperation to solve the shared-problems. For example, technology invention as a solution for limited tools in waste management. The Policy Transfer here can be implemented by Surabaya introducing a waste-based power plan and the use of the Takakura method to other cities to help manage their waste. Therefores it is possible for cities and regencies of East Java to conduct a C2C Policy Transfer for Green Economy policies. This strategy will be effective in improving the creation of green economy policy and increasing the capacity of many cities and regencies in manifesting green economy-city. Shefer then recommends a few steps to be considered, those are (1) Development of institutions to incorporate the learning; (2) A structured, collaborative process between local authority, NGOs, private sector, and civil society; and (3) Enhancing the capability of human resources especially those that directly execute the cooperation. Step (1) could include not only formation of a new institution or new sub-organizational body that specializes in green-economic policy, but also the integration of existing institution programs with green economy-oriented frameworks like the SDGs. Step (2) could be in the form of thorough collaboration between every existing green economy-related entity to implement the policies with clear division of tasks and consistent communication with institutions in or/ and outside of the city. Step (3) would focus on the development of both quality and quantity of human resources, by focusing on inclusive knowledge transfer, project execution, and constant recruitment. These steps are similar to what Surabaya had done in its green-economic policy development, therefore can also be used as references for cities and regencies in East Java to learn more about the implementation of green-economic policy. Researchers acknowledge

that there are unique challenges to this strategy, such as different prioritization of local policy, different local context, different availability of budget allocation and human resources, level of society's awareness, and different urges. However, these differences can be overcome by mutual understanding and concern toward harm that could harm both environmental and economic aspects of the city, as well as the relatively same concern throughout the cities in East Java which is the waste management problem. The characteristic of green economy policy is also an adaptive policy, which is capable of being developed in various environments and municipalities with different dynamics, which is proven by its capacity to be developed as the Green Sister City concept that also exists in various parts of the world (Yu et al., 2019) . Yu, et al. (2019) also suggest their method that searches the most-fitting policy directly based on the performance in the targeted environment, by learning 'a family' of policies that exhibit different behaviors simultaneously to overcome those differences. Therefore, implementation of C2C cooperation based on the framework of Urban Good Governance in Green Economy can be done as one of the ways in the Policy and Capacity Development stage.

Monitoring and Evaluation

This stage is important to ensure the sustainability and consistency of policies' implementation. This stage can also increase the policy's accountability by finding rooms for improvement (European Network for Rural Development, 2021). According to the European Network for Rural Development (2021), there are three main phases of policy-creation, which are (I) Policy Design; (2) Policy Delivery; (3) Policy Review. Monitoring and evaluation are integrated in all these phases to ensure its effectiveness in practical implementation. Monitoring and evaluation often needs a performance tool, which is a tool that can provide an overall assessment of progress and implementations in a way that will reach the target audience (Miola & Schiltz, 2019). The performance tool recommended by this paper is the framework of Urban Good Governance in Green Economy itself, which demonstrates the intersection of four key aspects and (some) three indicators to assess the four dimensions available. The demonstration can be seen in evaluating society's awareness toward proper waste management. The monitoring and evaluating can be done through the third dimension, *the green-economy system dimension*. The intersection between the 3rd indicator of the dimension, '*internalization of externalities*' and the 4th key aspect of the framework, '*Ecosystem, social and knowledge services*' can result in a statement/question that can be used to assess society's awareness. For example, 'the number of socializing and training in waste management done by the government in a year', that measures the intensification of education provided by the government, as society's awareness depends on the government's determination on providing constant education on the matter. The characteristics of actors in monitoring and evaluating processes can be divided into two kinds. One is the actor specialized in monitoring, who works exclusively in measuring the outcome of a certain policy. Other one is all the actors that are involved in the policy implementation, to work as check and balance of each other and implement the policy. Involvement of all actors are critical to ensure the sustainability of policy implementation, so that the framework of Green-economic city can be properly developed for sites and regencies throughout East Java provinces.

Conclusion

The development of Surabaya's green-economy city concept is still progressing, supported by its main projects which is Green Sister City Kitakyushu that has been broken down with the green economy framework. At this point researchers believe that Surabaya has a big potential to develop wholly as a successful Green-economy city, although time

and efforts are still very much needed. Surabaya needs to focus on prevention measures rather than solving measures in developing its green-economy policy. The result of Urban Good Governance in Green Economy policy has been mapped above, and it can be used as a reference on what aspect Surabaya needs to improve, to continue, or to maintain. Other East Java cities and regencies already have their motivations to solve environmental concerns and similar problems, particularly on waste management, that can be used as a way to cooperate more with each other. This paper encourages cooperation by suggesting strategies that can be taken, along with the steps and demonstration of the strategy, so that it is clear that the framework and suggestions are very much applicable. However, this research only analyzes the *green economy city* development concept from the government point of view, through the policies and implementation. Further research is expected to explain other points of view such as the private sector or non-governmental actors which have a role in the process of developing green economies-cities.

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