

## THE ROLE OF JAKARTA-BERLIN SISTER CITY TO SUPPORT GREEN CITY PROGRAM IN 2018-2023

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**Abstrak:** Studi ini menyoroti peran kota dalam hubungan internasional, khususnya dalam mengatasi tantangan lingkungan global. Jakarta menghadapi tantangan perkotaan dan berupaya menjadi kota hijau melalui kerja sama kota kembar dengan Berlin sejak 1994. Penelitian ini menggunakan metode kualitatif dengan tipe penelitian deskriptif, dengan memanfaatkan data sekunder yang diambil dari berbagai sumber. Berdasarkan hasil penelitian, terdapat beberapa macam kontribusi yang telah dilakukan oleh Jakarta dan Berlin dalam rangka menjadi kota hijau, seperti inovasi pengelolaan sampah, transportasi yang ramah lingkungan, dan pengembangan ruang terbuka hijau. Analisis ini menyoroti bahwa paradiplomasi kota kembar tidak hanya mendukung penyebaran teknologi dan pengetahuan, namun juga memacu inovasi lokal dalam mengatasi tantangan perkotaan. Potensi GCSC Jakarta-Berlin sangat besar dalam memandu transformasi menuju kota hijau Jakarta, namun hal ini membutuhkan waktu dan penyesuaian. Optimalisasi Dampak Strategi yang Dapat Ditindaklanjuti dan Berkelanjutan.

**Kata Kunci:** Paradiplomasi, Sister City, Kota Hijau, Jakarta, Berlin

**Abstract:** This study highlights the role of cities in international relations, particularly in addressing global environmental challenges. Jakarta faces urban challenges and endeavours to become a green city through twin-city co-operation with Berlin since 1994. This study uses a qualitative method with a descriptive research type, utilizing secondary data taken from various sources. Based on the results of the research, there are several kinds of contributions that Jakarta and Berlin have made in order to be a green city, such as waste management innovation, environmentally friendly transportation and development of green open spaces. The analysis highlights that the sister city paradiplomacy not only supports technological and knowledge spill-overs but also spurs local innovation in addressing urban challenges. The potential for the Jakarta-Berlin GCSC is great in guiding transformations toward a green city of Jakarta, but it will need time and adjustments. Actionable, Sustainable Strategy Impact Optimization.

**Keywords:** Paradiplomacy, Sister City, Green City, Jakarta, Berlin

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## INTRODUCTION

In the contemporary era, the application of science and technology is developing very rapidly in multi-sectors of human life driven by modern globalization. This phenomenon is characterized by, a) an increase in interaction that occurs between world communities as if it is not hindered by distance and time, resulting in interdependence between nations. b) The emergence of non-state actors in international relations studies.<sup>1</sup> This means that the implementation of international cooperation can be carried out between cities and provinces. In reality, every city in all countries plays an important role in becoming a source of economy, knowledge, and technology that has the potential to encourage the process of globalization.<sup>2</sup>

Jakarta is an economic center, the center of government and high urbanization, of course, it needs adequate management,<sup>3</sup> and balanced with real programs related to the environment, to achieve this interest, one of the ways carried out by DKI Jakarta is diplomacy. According to G.R Berridge carries out diplomacy activities carried out by actors without involving violence, law, or propaganda, which aims to reach an agreement.<sup>4</sup>

Around the 1980s, Duchacek and Soldatos combined the term "parallel diplomacy" into "paradiplomacy",<sup>5</sup> and this year also used the term paradiplomacy for the first *time* in scientific publications. The rise of research on federalism and comparative politics is associated with its resurgence. Federalism is a form of government in which the federal

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<sup>1</sup> Rizki Rahmadini Nurika. "Peran Globalisasi Di Balik Munculnya Tantangan Baru Bagi Diplomasi Di Era Kontemporer". *Sospol* 3, No.1 (2017):126-41, doi: <https://doi.org/10.22219/sospol.v3i1.4404>.

<sup>2</sup> Jemmy Rumengan, "Perspektif Hukum dan Ekonomi atas Kerjasama Luar Negeri oleh Pemerintah Daerah." *Jurnal Hukum Internasional* 6, No.2 (2009): 239, doi: 10.17304/ijil.vol6.2.203

<sup>3</sup> Astutik, Endang Puji, and Gunartin Gunartin. "Analisis Kota Jakarta Sebagai Smart City Dan Penggunaan Teknologi Informasi Dan Komunikasi Menuju Masyarakat Madani." (*INOVASI: Jurnal Ilmiah Ilmu Manajemen* 6 no.2 (2019): 41-58, doi: <https://doi.org/10.32493/Inovasi.v6i2.p41-58.3678>.

<sup>4</sup> G.R. Berridge, *Theory and Practice*, 2nded. (New York: Palgrave, 2010).

<sup>5</sup> Liu, T., & Song, Y, *Chinese Paradiplomacy: A Theoretical Review*. (SAGE Open, 10(1), 2020) doi: <https://doi.org/10.1177/2158244019899048>

government and local, state, or local governments share authority.<sup>6</sup> Paradiplomacy in general can be interpreted as an activity carried out by a subnational or sub-state entity in carrying out diplomatic activities with its foreign partners. This is based on the opinion of Daniel Bell<sup>7</sup> who stated that the state is too big in solving problems or taking care of small things and at the same time the state is too small to take care of big things.

According to Rodrigo Tavares entitled "Paradiplomacy Cities and States as Global players" paradiplomacy consists of four types, the first is ceremonial paradiplomacy or known as *sister city*, the second is Global Paradiplomacy, Sovereign paradiplomacy and Single themed paradiplomacy.<sup>8</sup> The goal of the Sister City program is to create all-round city-level collaboration, advance cultural exchange, and stimulate economic growth. Creating opportunities for city governments and residents to experience and learn about different cultures, drive economic and community growth, and strengthen intercity relationships globally are its main goals. Through cultural, educational, business, and technological exchanges, the program also fosters an environment of cooperative learning and problem-solving. In addition, Sister Cities works closely with international organizations that share the same goal of promoting long-term exchanges and partnerships between cities from different countries and cultures that are beneficial to both parties.<sup>9</sup>

The legality of paradiplomacy in Indonesia has been issued by the Indonesian government through the Regional Autonomy Law with the aim that local governments are given the authority to freely carry out

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<sup>6</sup> Paquin, S, *Paradiplomacy*. In A. F. Cooper, J. Heine, & R. Thakur (Eds.), *The Oxford Handbook of Modern Diplomacy*. (Oxford University Press, 2019)

<sup>7</sup> Daniel Bell, *The third technological revolution and its possible socio-economic consequences*. (Dissent, 36 (2), 1989) p.167.

<sup>8</sup> Rodrigo Tavaers, *Paradiplomacy cities and States Global Players* (Oxford University Press, 2016).

<sup>9</sup> Rio Rusandi. "Kerjasama Sister City Jakarta-Berlin dalam Bidang Kebudayaan pada Tahun 2011-2014." *eJournal Ilmu Hubungan Internasional* 4 no. 4, (2017): 1255-1270.

international cooperation abroad as stated in Law No. 32 of 2004. The Law on Regional Autonomy continues to be updated until Law No. 23 of 2014.<sup>10</sup>

In line with this, the Jakarta government and the Berlin government are practicing paradiplomacy. Berlin and Jakarta are metropolises that have similar problems and complications because of the many similarities in them, which is a factor causing paradiplomacy between the two cities.<sup>11</sup> The cities of Berlin and Jakarta have been twin cities since 1993. Collaborative efforts began when Soerjadi Soedirdja, the Governor of DKI Jakarta at the time, went to Berlin to establish cooperation in the fields of housing, public transportation, and urban planning and governance. On April 13, 1994, the governments of Berlin and DKI Jakarta signed an agreement on twin city relations. Eberhard Diepgen, who was then the mayor of Berlin, personally signed the agreement with the Governor of Jakarta, Soerjadi Soedirdja.

This research comes as an update on the previous article entitled "Cooperation of Sister City Jakarta Berlin in the Field of Culture in 2011-2014" by Rio Rusandi, and published in 2017 through the *eJournal of International Relations* which explores the implementation of collaboration programs between the two cities in the field of culture. The essence of the discussion of this article is to make culture the main focus and one of the fundamental pillars diplomacy which is used as the basis for Sister City Jakarta Berlin cooperation. And through this paradiplomacy, Indonesia's national interests in the field of culture can be implemented.<sup>12</sup> In line with the research, Muhammad Khalifah also produced a research entitled "Implementation of Cooperation between the Sister City of Jakarta and the City of Beijing regarding the Youth Exchange Program in 2017-2019". In general, this research also discusses the implementation or procedure of

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<sup>10</sup> Fezrin Inggrit Debora Nainggolan, Roberto Octavianus Cornelis, and Sri Suwartiningsih. "Implementasi Sister City Pemerintah Kota Medan -Ichikawa Jepang Dalam Mewujudkan Pendidikan Bermutu Tahun 2018-2019." *SABANA: Jurnal Sosiologi, Antropologi, Dan Budaya Nusantara* 1 no.3 (2022): 122-36. <https://doi.org/10.55123/sabana.v1i3.1075>.

<sup>11</sup> Kunto Wibisono "Gubernur Berlin Bangga Jakarta Menjadi Sister City Berlin" *Antaranews*, accessed June 20, 2024, [Newshttps://www.antaranews.com/berita/265318/gubernur-berlin-bangga-jakarta-menjadi-sister-city-berlin](https://www.antaranews.com/berita/265318/gubernur-berlin-bangga-jakarta-menjadi-sister-city-berlin)

<sup>12</sup> *op.cit* Rusandi

cultural exchange carried out by Jakarta - Beijing, through the Youth Exchange Program.<sup>13</sup> In 2017, Annisa Septyana Arisandy's article with the title "Jakarta-Rotterdam Sister City Cooperation in Jakarta Flood Management". In general, this article seeks to find out the success of the sister city cooperation between Jakarta and Rotterdam what is flood management in Jakarta and results that the implementation of the Jakarta-Rotterdam sister city cooperation program in the Jakarta flood control program is carried out with two project components in accordance with the content of the MOU.<sup>14</sup> The next is the work of Astutik, et al. entitled "Analysis of the city of Jakarta as a smart city and the use of information and communication technology towards civil society" This research aims to analyze and describe the advantages and disadvantages of the Jakarta Smart City program which is associated with the use of information and communication technology to move towards civil society after running for more than four years.<sup>15</sup>

Therefore, this article seeks to combine Jakarta Green City efforts in line with paradiplomacy between Jakarta and Berlin within the framework of Sister City. Proves that through this sister city, it helps Jakarta in achieving a Green city.

### **Green City Concept**

*Green City* refers to the concept of environmentally conscious and sustainable urban development achieved through a balanced development strategy that balances social progress, economic growth, and environmental protection to make the city livable for both present and future generations. Through the use of a combination of spatial, infrastructure, and social

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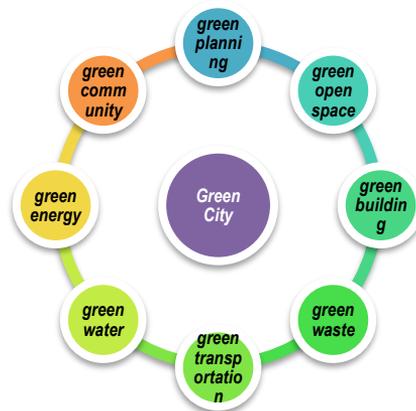
<sup>13</sup> Muhammad Khalifah. "Implementasi Kerjasama Sister City Kota Jakarta dengan Kota Beijing Mengenai Youth Exchange Program Tahun 2017–2019." *Jurnal Good Governance*, (2023): 1-13. Doi: <https://doi.org/10.32834/gg.v19i1.582>

<sup>14</sup> Annisa Septyana Arisandy. "Kerjasama Sister City Jakarta-Rotterdam dalam Penanggulangan Banjir Jakarta." *eJournal Ilmu Hubungan Internasional* 5 no. 3, (2017): 979-994.

<sup>15</sup> Astutik, Endang Puji, and Gunartin Gunartin. "Analisis Kota Jakarta Sebagai Smart City Dan Penggunaan Teknologi Informasi Dan Komunikasi Menuju Masyarakat Madani." (*INOVASI: Jurnal Ilmiah Ilmu Manajemen* 6 no.2 (2019): 41-58, doi: <https://doi.org/10.32493/Inovasi.v6i2.p41-58.3678>.

development techniques, the Green City idea seeks to create sustainable urban development by minimizing the adverse impact of infrastructure development on the environment. Because it emphasizes sustainable development and environmental issues, the concept of a Green City is, in theory, one of the best approaches to address environmental problems in the city of Jakarta.<sup>16</sup> The Green City concept consists of eight elements:

**Table 1. Eight Elements of Green City**



Source : <https://bappeda.bandaacehkota.go.id/program-strategis/green-city/>

1. *Green Planning And Design*: Planning for environmentally friendly land use and building practices is necessary for green cities, as is the creation of visually appealing areas.
2. *Green Open Area* : improving the city's attractiveness and fostering a pleasant microclimate, green open space helps lower pollution. This can be achieved by growing green corridors, parks, and other areas.
3. *Environmental Waste* : Reduce, reuse, and recycle are the guiding principles of green waste management. Furthermore, ecologically

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<sup>16</sup> Edwin Egede and Peter Sutch, “5 The Protection of Human Rights and International Law. Justice and Injustice in the Age of Human Rights,” in *The Politics of International Law and International Justice*, (2022): 178–213, <https://doi.org/10.1515/9780748634736-007>.

responsible waste processing and disposal technologies are essential to the success of green garbage management.

4. *Green Transportation* : public transportation that prioritizes the development of high-quality mass transit. In order to encourage the growth of mass transit, green transportation seeks to decrease car emissions, boost the use of public transportation, decrease the usage of private automobiles, and designate areas of the road that are welcoming to bikes and pedestrians.

5. *Green Water*: produce high-quality water while utilizing water resources efficiently. With the help of cutting-edge technology, this idea may be expanded to include the effective use of fresh water, or blue water, the supply of drinkable water, the treatment and reuse of gray water, and the preservation of the quality of groundwater, or green water.

6. *Green Energy* : aims to lower energy consumption by utilizing renewable energy sources including wind, sun, and landfill methane emissions in addition to other sources.

7. *Green Building* : the efficient and ecologically friendly development of structures, including its design, construction, upkeep, and even rehabilitation. Green construction needs to be appropriate, long-lasting, comfortable, and affordable. With its efficient use of energy, water, and other resources, ability to minimize waste, pollution, and environmental harm, and ability to preserve occupant health, green buildings aim to lessen the detrimental effects of buildings on both human health and the environment.

8. *Green Community* : a tactic used to include different government, corporate, and community partners in the creation of green cities. The goal of a green community is to foster genuine stakeholder involvement in the development of green cities and to establish a community with environmentally conscious traits and behaviors, such as the practice of properly disposing of waste and active community involvement in government green city initiatives.

## METHOD

The data used by the author in this case is secondary data because the author uses documentation studies to collect data in order to answer the formulation of the research problem. According to Sugiyono (2007) a document is a written record of past events, photographs, or artistic works of a person. Therefore, the author uses information collected from various current sources, including books, journals, and internet articles, to be evaluated and interpreted according to the purpose of the research.

This study uses a qualitative method to deepen the important matters underlying Jakarta's interests to improve its partnership with Berlin through the cooperation of twin city paradiplomacy. The data used in this study are descriptive-qualitative.<sup>17</sup> Qualitative methods can provide more detailed and complex data regarding the phenomenon being studied. Therefore, these data are expected to expand knowledge and insight into the interests of the City of Jakarta in increasing its partnership with the City of Berlin through sister city cooperation paradiplomacy. This research adopts a descriptive-qualitative method.

The data analysis technique model in deductive research is a way in which the process takes place from new theories to facts, which means that research is written by explaining a phenomenon in society based on valid facts.<sup>18 19</sup>

In connection with the analysis procedure, the authors used interactive data analysis. According to Miles & Huberman, this analysis begins with

### 1. Data collection

The author searches for data on the sister city cooperation between Jakarta and Berlin that are in accordance with the research topic through documentation

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<sup>17</sup> Robert Bogdan & Steven J. Taylor, *Pengantar Metode Penelitian Kualitatif : Suatu Pendekatan Fenomenologis Terhadap Ilmu-ilmu Sosial* (Surabaya; Usana Nasional, 1992) Pp 21-22

<sup>18</sup> Ulber Silalahi, *Metode Penelitian Sosial* (Bandung.PT.Refika Aditama, 2012) Pp 27-28

<sup>19</sup> Sandu Sitooyo, *Dasar Metodologi Penelitian* (Yogyakarta. Literasi Media Publishing, 2015)

## 2. Data reduction

selection of data or information in accordance with the focus of the research

## 3. Data Presentation

Roses presents data that has been collected and analyzed in a form that is easy for the audience to understand. The processed data is presented in a variety of formats, such as tables, graphs, diagrams, or other visual forms

## 4. Conclusion Withdrawal

In the last stage, conclusions are made based on the information and theories or concepts produced.

The data includes information on the implementation and role of sister city cooperation, international cooperation (programs/projects), and green cities related to Berlin and Jakarta cooperation through sister city cooperation paradiplomacy. This research focuses on the paradiplomacy of sister city cooperation between Berlin and Jakarta from 2018 to 2023.

## RESULT

### THE URGENCY OF JAKARTA TO IMPLEMENT A GREEN CITY

The area is 661.5 km<sup>2</sup>,<sup>20</sup> according to the central statistics agency of DKI Jakarta, in 2021 the population reached 10 467.63 million people, the density was 15 804 and the population growth was around 1.07% per year.<sup>21</sup> followed by the closure of forest and non-forest land by 63.5%.<sup>22</sup> while in

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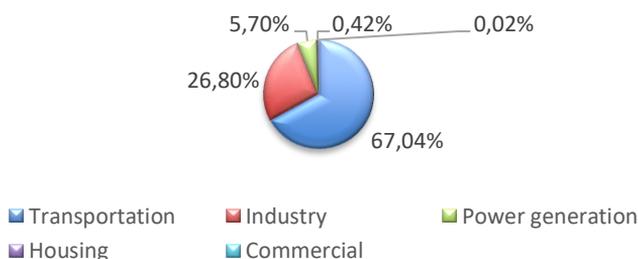
<sup>20</sup> “Pemerintah Provinsi DKI Jakarta.” BPK RI, accessed June 20, 2024, <https://jakarta.bpk.go.id/pemerintah-provinsi-dki-jakarta/>

<sup>21</sup> “Penduduk: Laju Pertumbuhan Penduduk, Distribusi Persentase Penduduk, Kepadatan Penduduk, Rasio Jenis Kelamin Penduduk Menurut Provinsi/Kabupaten/Kota.” Badan Pusat Statistik Provinsi DKI Jakarta, accessed June 20, 2024, <https://jakarta.bps.go.id/indicator/12/124/2/penduduk-laju-pertumbuhan-penduduk-distribusi-persentase-penduduk-kepadatan-penduduk-rasio-jenis-kelamin-penduduk-menurut-provinsi-kabupaten-kota.html>

<sup>22</sup> “Rekapitulasi Luas Penutupan Lahan Hutan dan Non-Hutan Menurut Provinsi Tahun 2014-2022 (ribu ha).” Badan Pusat Statistik, accessed June 20, 2024, <https://www.bps.go.id/id/statistics-table/1/MjExMCMx/rekapitulasi-luas-penutupan-lahan-hutan-dan-non-hutan-menurut-provinsi-tahun-2014-2022--ribu-ha-.html>

Law No. 26 of 2007 it is stated that The provision of Green Open Space (RTH) in an area is around 30% of the area of the area.<sup>23</sup> The population is increasing, while land is increasingly limited.

**Table. 2 Transportation, the Main Source of Pollution in Jakarta Province (2018)**



Source : <https://zonaebt.com/perubahan-iklim/transportasi-sumber-polusi-utama-di-provinsi-jakarta-2018/>

The largest source of pollution is transportation, and according to the index assessment from the Swiss firm IQAIR, the most polluted city in the world is Jakarta, which occupies the fifth position. In addition, the air pollution problem that occurs in Jakarta, 13 rivers that pass through Jakarta have been polluted from moderate to heavy status. This has an impact on the availability of clean water and drinking water. Residents who work as fishermen also complain about the decrease in the number of fish and poor quality of shellfish in recent years. Industrial waste also adds to the deterioration of environmental conditions in Jakarta. In 2020, the amount of waste has reached 8,368 tons per day, exceeding the storage limit. In the 2021 maplecroft verisk analysis report, the Jakarta area has experienced an increase in sea level, even 40% of the Jakarta area is already below sea level.<sup>24</sup>

<sup>23</sup> Aris Prihandono. "Penyediaan Ruang Terbuka Hijau (RTH) menurut UU No. 26/2007 tentang penataan ruang dan fenomena kebijakan penyediaan RTH di daerah." *Jurnal Permukiman* 5.1 (2010): 13-23.doi : <https://doi.org/10.31815/jp.2010.5.13-23>

<sup>24</sup> Muhammad Aminullah. "Selain Polusi Udara, Ini Persoalan Lingkungan Hidup Jakarta yang Lain." WAHLI Jakarta. Accessed June 20, 2024, <https://walhijakarta.org/selain-polusi-udara-ini-persoalan-lingkungan-hidup-jakarta-yang-lain/>

In this case, the network of urban parks and forests is being improved by the DKI Jakarta government, in the hope of restoring biodiversity to the environment. The design of the joint forward park (TMB) is also being promoted for environmental social sustainability. Jakarta is also committed to contributing to protecting nature in line with the governor's regulations on trees and parks to carefully monitor natural habitats.<sup>25</sup> Jakarta has a responsibility to be able to achieve the demands of the MDG, namely by integrating the principles of sustainable development contained in its policies and program implementation in order to reduce the loss of environmental resources to achieve a healthier life for people in the environment.<sup>26</sup>

## **JAKARTA GREEN CITY IMPLEMENTATION**

### ***1. Green Planning and Design***

Based on Regional Regulation Number 1 of 2012 concerning the Regional Spatial Plan (RTRW) of the City of Jakarta for 2011-2030. A regional spatial plan or commonly referred to as RTRW is a result of spatial planning in an area which is a geographical unit along with all related elements, whose boundaries and systems are determined based on administrative aspects. To further operationalize the implementation of development in the Jakarta City area, the Jakarta City Regional Spatial Plan (RTRW) is a tool.<sup>27</sup>

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<sup>25</sup> "Urban park development and greening." Jakarta Low Emission, Accessed June 20, 2024. <https://rendahemisi.jakarta.go.id/action/detail/36/pengembangan-taman-kota-dan-penghijauan>

<sup>26</sup> Karen Tambayong, "headed to Jakarta as a green city." Retrieved June 20, 2024

<sup>27</sup> Regional Regulation Number 1 of 2012 concerning the 2030 Regional Spatial Plan. (n.d.). Retrieved June 20, 2024, from <https://pelayanan.jakarta.go.id/download/regulasi/peraturan-daerah-nomor-1-tahun-2012-tentang-rencana-tata-ruang-wilayah-2030.pdf>



in Jakarta that function as RTH that contribute to oxygen supply, noise suppression.<sup>31</sup>

### 3. *Green Waste*

The Jakarta Waste Aware Initiative, which involves individuals actively participating in waste reduction, sorting, and processing at the household level, has been promoted by the DKI Jakarta Provincial Government as a way to control green waste.<sup>32</sup> As many as 50% of RWs in Jakarta have carried out scheduled waste transportation, and more than 141,000 households have started waste sorting.<sup>33</sup> In addition, waste management is also the main focus with the development of the Bantargebang TPST using the land mining method and the Red-White Waste Power Plant (PLTSa). Modern technology is also applied in the Centralized Domestic Wastewater Management System (SPALD-T) to reduce water pollution. The program includes 15 urban-scale SPALD-T development zones, which are expected to be able to efficiently handle domestic waste and reduce the risk of water-related diseases.<sup>34</sup>

### 4. *Green Water*

The government has taken measures such as demolishing illegal buildings along the river and relocating residents to flats to minimise the negative impact.<sup>35</sup> In addition, dredging garbage at the sluice gates using excavators has been carried out to keep the river flow smooth and clean. The establishment of environmental care communities and tree planting along the watershed are also important steps in improving the river

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<sup>31</sup> “Green Open Spaces in Jakarta: A List of City Parks Near You.” Jakarta Property Institute, Accessed June 20, 2024, from <https://jpi.or.id/news/ruang-terbuka-hijau-di-jakarta-daftar-taman-kota-di-sekitar-anda>

<sup>32</sup> “Jakarta Sadar Sampah.” Jakarta Rendah Emisi, Accessed 21 June 2024. <https://rendahemisi.jakarta.go.id/action/detail/27/jakarta-sadar-sampah>.

<sup>33</sup> Nelly Marlianti. “50 Persen RW di Wilayah Jakarta Pusat Sudah Memilah Sampah dari Rumah.” pemerintah kota administrasi jakarta pusat, 5 1 2022, Accessed 21 06 2024. <https://pusat.jakarta.go.id/news/2022/50-persen-rw-di-wilayah-jakarta-pusat-sudah-memilah-sampah-dari-rumah>.

<sup>34</sup> Water Resources Agency (jakarta.go.id)

<sup>35</sup> “Normalization Project to Prevent Floods, Illegal Buildings on the Grogol River Demolished” Tempo, Accessed June 20, 2024 from Metro Tempo.co

ecosystem. The government is also active in changing the behavior of residents around the river through various activities such as the clean Friday movement and imposing fines for residents who throw garbage into the river. All of these efforts aim to create a clean, healthy, and sustainable environment along Jakarta's green waterfront.<sup>36</sup>

## 5. *Green Transportation*

In 2020, Jakarta managed to get out of the top 10 most congested cities in the world and is now ranked 46th.<sup>37</sup> The popularity of public transportation is increasing with the number of daily passengers reaching 1 million people and the annual number of passengers doubling in the last two years. Public transportation can be reached on foot within a radius of 700 meters from residences, covering 86.8% of residents.<sup>38</sup> The Jakarta Provincial Government also integrates various modes of public transportation under the JakLingko program to facilitate citizen mobilization, including MRT, Transjakarta, KRL, and LRT. The Jakarta MRT, which has been operating since 2019, has now been integrated with other stations and bus stops and is equipped with Transit Oriented Development (TOD) facilities.<sup>39 40</sup>

## 6. *Green Energy*

KAS Green Energy is one of the leading renewable energy project integrators and developers in Indonesia, committed to maintaining cleanliness and sustainability in the future. Since its inception nearly a quarter century ago, KAS Green Energy has been instrumental in

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<sup>36</sup> Muchlison, Muhammad Hadi, Nazih Rizqullah, Syah Mario Norman. Green Water Front as an Effort to Flood Control and Slum Environmental Management in the Ciliwung Watershed. Retrieved June 20, 2024,

<sup>37</sup> "Jakarta Gets Out of the Top 10 Most Congested Cities in the World." *Bisnis*, Accessed June 20, 2024 (bisnis.com)

<sup>38</sup> "Jakarta Provincial Government's Efforts to Mitigate Climate Change in Jakarta." *Berita Jakarta*, Accessed June 20, 2024 from (beritajakarta.id)

<sup>39</sup> *op.cit.*, Folmer

<sup>40</sup> Ministry of Transportation of the Republic of Indonesia. (2022, July 22). The Ministry of Transportation Agrees on the G to G Future Cities Green Transportation Program. Bureau of Communication and Public Information. Retrieved June 20, 2024, from <https://dephub.go.id/post/read/kemenhub-sepakati-program-g-to-g-future-cities-green-transportation>

developing the renewable energy market in driving the change towards clean and sustainable energy. With a commitment to develop more than 100 MW of projects in the future, supported by innovation, reliability and expertise.<sup>41</sup>

## **7. Green Building**

Green implementation is in the form of the use of environmentally friendly technology and design to optimize the efficiency of energy, water, and building materials. A clear example of this effort is the Block G Building, DKI Jakarta City Hall Office, which has implemented the principle of green building. In addition, the DKI Jakarta DPRD Building also follows this trail by applying the same standards. The implementation of green building aims to reduce carbon footprint, improve indoor air quality, and promote the sustainable use of resources. These measures are in line with Jakarta's vision as a "Green City", where the development and management of urban infrastructure is carried out with ecological balance and long-term sustainability in mind.<sup>42</sup> Jakarta International Stadium (JIS) received the greenship platinum award for Design Recognition from the Green Building Council Indonesia (GBCI) certification body. This Platinum Greenship is the highest level of environmentally friendly building predicate. The Jakarta International Stadium (JIS) which has the slogan 'Our Stadium' is the first public space in Indonesia that carries the concept of green building.<sup>43</sup>

## **8. Green Community**

The implementation of green community in Jakarta can be seen through the One Satrio project which was recently launched by PT. Jakarta Setiabudi International, Tbk (PT. JSI) in the Mega Kuningan area. This

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<sup>41</sup> "Green Energy Cash." solarhub, Retrieved June 20, 2024, from <https://solarhub.id/listing/kas-green-energy/>

<sup>42</sup> "Jakarta wants to become a Green City" (2011, June 22). Retrieved June 20, 2024,

<sup>43</sup> "Implementation of Green Buildings." DKI Jakarta Provincial Environmental Agency, Retrieved June 20, 2024, from <https://rendahemisi.jakarta.go.id/action/detail/32/implementasi-gedung-hijau>

project carries the concept of "breathable space" with the majority of green open spaces, creating an environment that is not only aesthetic but also sustainable. By providing facilities such as jogging tracks, green parks, pet parks, and multifunctional areas. The careful selection of tenants, with 85% of outlets engaged in food and beverage (F&B) prioritizing environmentally friendly practices, also reflects One Satrio's commitment to a green lifestyle. Measures such as waste segregation, provision of charging facilities for electric vehicles (EV charging), and solar energy use plans demonstrate the project's dedication to supporting environmental sustainability in Jakarta, making it a clear example of the implementation of green communities in a dense and dynamic urban context.<sup>44</sup>

## **THE ROLE OF SISTER CITY JAKARTA-BERLIN COOPERATION**

This paradiplomacy cooperation began with the initiation of Jakarta Governor Soerjadi Soerdirdja during his visit to Berlin in 1993. He planned to cooperate in urban planning, clean water management, housing industry, and public transportation, the desire to improve Jakarta's traffic management was also one of the reasons for the emergence of this sister city.<sup>45</sup> and only on April 13, 1994, the official signing of the MOU on sister city cooperation by Jakarta Governor Soerjadi Soedirja and the Mayor of Berlin, Eberhard Diepgen, in the MOU contained cooperation in housing development planning, urban planning, cooperation in the economic and cultural fields, clean water/drinking water management, and wastewater management.<sup>46</sup>

This will also encompass the realization of a cooperation of the Future City Hub with Jakarta and Berlin, which extends a program in dealing with various urban challenges, such as waste management. The Jakarta Digital

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<sup>44</sup> "One Satrio, a Green Lifestyle Retail in Jakarta City Center, has started to open." Metapos.id. Retrieved June 20, 2024, from <https://www.metapos.id/one-satrio-green-lifestyle-retail-di-pusat-kota-jakarta-mulai-dibuka/>

<sup>45</sup> "Wow!. Kolaborasi Menakjubkan Syaharani Dan Craig Burton Awali Semarak Ulang Tahun Sister City Jakarta Berlin." Kemlu Accessed June 20, 2024 <https://kemlu.go.id/berlin/id/news/1427/wow-kolaborasi-menakjubkan-syaharani-dan-craig-burton-awali-semarak-ulang-tahun-sister-city-jakarta-berlin>

<sup>46</sup> *Ibid.*,<sup>45</sup>

Outlook, which is a key activity and brings stakeholders from different Indonesian cities together to collude with the government of Jakarta about future plans for saving themselves from floods, making their environment more resilient and making Jakarta as a world class metropolis. Jakarta-Berlin Cooperation Day becomes an important moment for signing a joint declaration on innovation and technology in sustainable urban development. Business Matchmaking serves a platform of stakeholders from the government, private sector, academics and other parties to collaborate in developing innovative solutions, including in waste management. Future City Hub acts as a platform to increase public awareness of the importance of environmental sustainability and as an innovation center with the most advanced waste management technology.

Future City Hub has a central role in advancing the Green City Jakarta project through several key aspects:

- a. This sister city acts as a center for creativity, providing a forum for the development of fresh concepts and the implementation of innovative solutions for the advancement and preservation of the environment.<sup>47</sup> This highlights the importance of using the best available technology and practices to reduce environmental degradation, such as improving the quality of water and irrigation systems.<sup>48</sup>
- b. Jakarta and Berlin worked together to improve expertise, technology, and knowledge in creating a more developed city. In order to inspire people to live environmentally conscious lives and take part in the protection of natural resources, Future City Hub also actively works to increase public understanding of the significance of ongoing education and public outreach.
- c. Sister city is crucial to putting into practice practical projects that support Jakarta's vision of becoming a Green City, such as the use of

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<sup>47</sup> Dewi, Afika Sari, and Bhakti Nur Avianto. "Implementation of " Jakarta Smart City" In One-Stop-Service: Daily Need In The City South Jakarta?" *Journal Research of Social Science, Economics, and Management* 2 no. 9 (2023) 2051 -. <https://doi.org/10.59141/jrssem.v2i09.428>.

<sup>48</sup> Salsabila I Syalianda and Ratih D Kusumastuti. "Implementation of smart city concept: A case of Jakarta Smart City, Indonesia." *IOP Conf. Ser.: Earth Environ* (2021)

renewable energy, environmentally friendly transportation systems, and effective waste management. It serves as a demonstration site for environmentally friendly technologies and other creative solutions.<sup>49</sup> As a result, the Future City Hub serves as both a symbol of the robust international cooperation between Jakarta and Berlin in the field of sustainable city development and as the primary engine for the development of sustainable solutions that can be implemented in numerous Indonesian and global cities.

## DISCUSSION

Strategy of the Jakarta City Government and the Berlin City Government to Realize a Green City. The worldwide environmental issues that cities face have prompted cooperative efforts among local governments to create creative solutions. Two cities that have emerged as leaders in this area are Berlin, Germany, and Jakarta, Indonesia. Both are putting various plans into place to change into sustainable and eco-friendly metropolitan hubs. The capital city of Indonesia, Jakarta, has concentrated its efforts on lowering plastic waste and enhancing trash management with cutting-edge technologies, Berlin<sup>50</sup> has set itself apart in the meantime with its robust recycling program and encouragement of product reuse.<sup>51</sup> Berlin is aggressively promoting energy efficiency in buildings and the use of renewable energy, while Jakarta is increasing the use of clean energy in infrastructure and transportation. Both cities have also shown a strong commitment to renewable energy.<sup>52</sup>

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<sup>49</sup> Denny M. Sundara et al., "Urban Forests for Sustainable Urban Development," *AIP Conference Proceedings* 1903 (2017), <https://doi.org/10.1063/1.5011521>.

<sup>50</sup> Putri, A.R., Fujimori, T. & Takaoka, M. Plastic waste management in Jakarta, Indonesia: evaluation of material flow and recycling scheme. *J Mater Cycles Waste Manag* 20, 2140–2149 (2018). <https://doi.org/10.1007/s10163-018-0753-2>

<sup>51</sup> Nguyen, Thu Hoai; VU, Giang Huong Thi. "Eco-city Paradigm: Urban Planning Towards Sustainable Development Goals In: E3S Web of Conferences." *EDP Sciences*, 2023. p. 01002.

<sup>52</sup> Haris Mukti Amrullah and Herdis Herdiansyah, "Socio-Cultural and Settlement Factors That Influence Pro Environmental Behavior on Rural-Urban Citizen," *Journal of Physics: Conference Series* 1424, no. 1 (2019), <https://doi.org/10.1088/1742-6596/1424/1/012043>.

Regarding mobility, both cities have promoted the adoption of low-emission car regulations as well as ecologically friendly public transportation options like bicycles and subways. Additionally, since both Jakarta and Berlin work to promote ecologically friendly lifestyles among their population, public education and awareness campaigns have been essential to their efforts.<sup>53</sup>

Initiatives like the Future City Hub project highlight the two cities' cooperation and shared commitment to sharing information, expertise, and technology in order to build a more sustainable and clean future. By coordinating these tactics, Berlin and Jakarta are not only demonstrating leadership in the fight against climate change, but they are also opening the door for other cities to embrace creative approaches to a more sustainable and greener future.

## CONCLUSION

The level of collaboration between Jakarta and Berlin as twin cities under the framework of paradiplomacy has resulted in important progress in the movement towards green cities. In addition to fostering closer ties between Indonesia and German, the partnership leverages Berlin's expertise in creating green cities by implementing initiatives such as the Future City Hub. Through the implementation of this collaboration, Jakarta has achieved a number of firsts in the field of sustainable city governance, including the creation of environmentally friendly infrastructure and the application of environmentally friendly technologies.

A number of factors still need to be considered so that this collaboration can continue to be successful and last for a long time even though it has achieved change and progress. Among them is Jakarta's determination to continue to increase its efforts to become an environmentally friendly metropolis. This requires more financing for green infrastructure as well as better environmental regulations and laws. With this in mind, Jakarta can ensure that its collaboration with Berlin not

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<sup>53</sup> Casini, M. "Green technology for smart cities." In: *IOP Conference series: earth and environmental science*. (IOP Publishing, 2017) p. 012014.

only generates direct benefits, but also makes a substantial contribution to the city's long-term goal of becoming more sustainable.

The Future City Hub and other initiatives play an important role as a catalyst for knowledge and technology transfer between Berlin and Jakarta. Using this platform, both cities can find creative answers to challenging urban problems and learn from and apply best practices in green city management.

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