CLIMATE RESILIENT AND INCLUSIVE CITIES

Co-funded by the European Union

URBAN ANALYSIS REPORT *2020*

01

CIREBON

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FOREWORD

Addressing the threat of climate change remains a top priority for the European Union (EU). The European Green Deal is a response to these challenges; it aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy with zero net emissions of greenhouse gases by 2050.

Through the Climate Resilient and Inclusive Cities (CRIC) project, the EU and Indonesia are working together to help cities build a resilient and inclusive future. We do so by building partnerships between governments, businesses, local communities and research institutes in Europe, South Asia and Southeast Asia.

Clearly, there are hurdles along the way, especially in the midst of the COVID-19 pandemic. However, our response to this pandemic needs to be a sustainable one, addressing the challenges of climate change as well as economic recovery.

Just last month, in Sukabumi City of West Java Province, a flash flood cost lives and forced hundreds of citizens to leave their houses. According to the Indonesian National Disaster Management Agency, Indonesia is about to experience more hydrometeorological disasters due to climate change. The CRIC Urban Analysis Report is a timely reminder that cities cannot delay their sustainable transition.

This Urban Analysis Report for ten Indonesian pilot cities under the CRIC project offers a comprehensive overview of city characteristics, policy gaps and climate-related policies in the cities of Pangkalpinang, Pekanbaru, Bandar Lampung, Cirebon, Banjarmasin, Samarinda, Mataram, Kupang, Gorontalo and Ternate.

The report provides empirical evidence to help cities develop policies and tools to strengthen climate change-affected sectors. I am happy to note the consultations among a wide range of stakeholders including government officials, academicians, civil society, professional practitioners, NGOs, and the private sector, ensuring that the proposals are inclusive.

We look forward to seeing how the cities will take up the given recommendations by transforming them into local climate-proof policies and programmes and to further working together to build climate resilient and inclusive cities.

Jakarta, October 2020

Vincent Piket

EU Ambassador to Indonesia and Brunei Darussalam

Mayor's Foreword

Cirebon has been selected as a pilot city to implement the Climate Resilient and Inclusive Cities (CRIC) Project.

We're honoured to be part of this project and aspired to continue working -under the guidance of United Cities and Local Governments Asia Pacific (UCLG ASPAC) - to realise climate resilient and inclusive urban development.

This Urban Analysis Report is a scientific report that represents existing conditions in Cirebon in relation to its strength, weaknesses, opportunity, and challenges. The report is expected to offer an alternative solution that is practical and applicable that our city government can adopt to address urban challenges that our communities are facing.

We hope that you all find this report useful, especially for government stakeholder and local communities. We extend our gratitude to UCLG ASPAC and its team for their support. We look forward to strengthening our partnership and working together towards climate resilient and inclusive Cirebon.

CIREBON CITY MAYOR

DRS. H. NASHRUDIN AZIS, SH

Climate Change is an issue of humanity, it is not merely a threat to the environment only. It is one of most visible humanitarian crises of the century. On very many occasions, we have seen how climate-induced disasters disrupted local economy, food system, basic services and left vulnerable groups more powerless. As an association connecting more than 10,000 cities and local governments in the Asia-Pacific region, UCLG ASPAC is responsible for supporting cities to be climate-resilient, something that we take seriously.

The cost of inaction now is huge. It is therefore urgent for cities to act and find solutions that should be based on data and scientific rigour enabling evidence-based decisions that subsequently reduce the impact of climate change. I emphasise, continual and periodic assessment of risks and change in attributes of cities are critical in enhancing resilience. In light of this, I commend the Climate Resilient and Inclusive Cities (CRIC) team and our urban experts for their hard work to publish this Urban Analysis Report. Great thanks to all the pilot cities of CRIC for their support in producing this Report. It presents a comprehensive outlook on climate risks, programmes and policies at a city level and provides recommendations and solutions to tackle climate change.

This report also underlines the importance of coordination that transcends administrative boundary as climate has no border! It is something that UCLG ASPAC can contribute through the CRIC Programme, by connecting the dots between cities in Asia and the Pacific and beyond within the framework of sub-national and national governments for vertical integration. We intend to bring cities on the center stage of "Blue Ocean" and "Blue Sky" agenda through action-based proposals and approaches on circular economy, air pollutions and cross-cutting issues. And we are committed to ensuring that climate change best practices can be up-scaled and replicated for greater multiplier impact.

I look forward to seeing how the plans are put into actions to create climate resilient and inclusive cities. Our future will depend on how cities act today. Every concrete step on climate action we make now will bring closer our dream for inclusive, prosperous and sustainable cities and communities.

Dr. Bernadia Irawati Tjandradewi

Secretary General of UCLG ASPAC

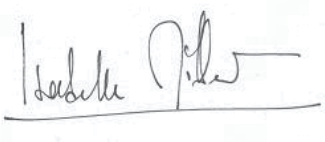
As President of Pilot4Dev, I have had the honor to be directly involved in the Climate Resilient and Inclusive Cities Project from its very inception. It was with great pleasure that I attended the CRIC Kick-off event back in January 2020 which allowed us to meet up with our Indonesian partners in order to prepare and launch the project. A great added value from this event was the possibility to meet up with the mayors of the cities piloting the implementation of the project. Today, there is a myriad of cities in need of support in terms of urban environment and climate change resilience.

Pooling the expertise and knowledge of EU partners including ACR+, Pilot4DEV, University Gustave Eiffel, ECOLISE and Asian partners UCL ASPAG and AIILSG, this very ambitious five years project aims to establish a long lasting and unique cooperation. It is carried out through a triangular cooperation between cities and research centres in Europe, South Asia (India, Nepal, Bangladesh), and Southeast Asia (Indonesia, Malaysia, Philippines, Thailand). It aims to contribute to sustainable integrated urban development, good governance, and climate adaptation/mitigation through long lasting partnerships, and tools such as sustainable local action plans, early warning tools, air quality and waste management in consultation with experts' panels. The final beneficiaries include the local community of the cities/provinces, including women, marginalised sector, civil society and private sectors.

Now entering the 10th month of its implementation, this project has already proven to be a fruitful endeavor now implemented in 10 different cities in Indonesia. Among the chief results obtained so far, 10 urban analysis reports have been written and edited, and assess the current capacities of the different target cities. The project in itself has required the direct involvement of local authorities' officials, generating a real eagerness to make the cities more resilient and inclusive at the local level. The next steps of this project will involve the release of the Urban Analysis Reports along with policy briefs and recommendations adapted to the different pilot cities which have been involved in the project so far. This release will be completed by the creation of tools put together by the International Partners of the CRIC project, in order to equip local authorities and possibly tackle the urban and environmental challenges they face.

Due to high urban growth rates in countries such as Indonesia, Vietnam and the Philippines it is predicted that a significant share of the population of those countries will be living in cities in the next ten years. Cities in the South Asian and South East Asian regions are already impacted by climate change, and they could substantially benefit from long lasting solutions in terms of climate resilience and inclusiveness. The CRIC Project aims to inform and facilitate the equipment of local governments, cities, urban stakeholders working on climate resilience, mitigation and adaptation of those cities by pooling the best resources available and transferring and adapting as much knowledge as possible. Since urban areas host most of the vulnerable populations, as well as vital and social infrastructure, and local governments get increased pressure to develop services, infrastructure and employment, it is therefore of utmost urgency to make sure that we are all up for the challenge presented by climate change.

Isabelle Milbert, President of Pilot4Dev



The CRIC project represents for the Association of Cities and Regions for sustainable resource management (ACR+) – a network of local and regional authorities mainly based in the EU and the Mediterranean Area – a unique opportunity to cooperate and strengthen the role of cities to deliver on resiliency and inclusiveness.

ACR+'s core mission is to develop sustainable resource management initiatives involving local and regional authorities; in particular regarding waste management, one of the priorities raised by the urban analysis report. As such and for more than 25 years, we have been designing and implementing initiatives on circular economy, waste prevention, and waste management, building through this an extensive knowledge basis. Several ACR+ members have been already cooperating in the South-East region, whose experiences could be capitalized on and further developed through CRIC.

Conversely, this project provides a great learning opportunity for ACR+ members, to understand how local initiatives make a difference at global level. The present report contributes to effectively comprehend the local context, shedding the light on the key challenges and priorities. It shows that the exchange of methodologies to support decision-making processes rather than transfer solutions is crucial to successfully deliver sustainable projects.

However, more than a mere exchange of experiences, CRIC is a timely reminder that cooperation is key, at all levels and between countries. The EU cannot deliver alone the ambition of the European Green Deal for a climate-neutral, resource-efficient and circular economy. Activities like the ones developed within the CRIC project (trainings, stakeholder engagement, tools development, local action plans) can provide solid evidence to support bilateral and regional policy dialogue actions aimed at implementing the Green Deal and 2030 Agenda's objectives beyond the EU. Unfortunately, we cannot and should not forget the wider context in which the project is unfolding: the COVID-19 outbreak has been posing tremendous challenges at local level. With the hindsight we have so far, we see that local agenda based on resilient models contribute to better adapt and mitigate the negative impacts of the pandemic. Having this in mind, ACR+ has been supporting its members in overcoming the situation and is determined to also follow this path in CRIC.

Françoise Bonnet

ACR+ Secretary General

ABOUT THE AUTHORS

Hari Priyadi is the lead expert responsible for the CRIC Urban Analysis of the cities of Cirebon and Bandar Lampung. He has been working with multidisciplinary projects for over twenty years with various institutions. His experiences were dealing with management of natural resource and research in Indonesia, Asian regions and fair experiences in Europe. He holds a Forestry Degree on Forest Management from IPB University, a Master of Science from University Putra Malaysia and is at the Swedish University of Agricultural Sciences for his ongoing PhD project. He is a Senior Associate at the Faculty of Economic and Management, IPB University. He also works as World Bank Technical Advisor (consultant) providing technical advice to the central and sub-national government related to Sustainable Forest Landscapes and Climate Change. Hari previously worked with: the Center for International Forestry Research (CIFOR) as a researcher; Swedish University of Agricultural Sciences (SLU) based in Alnarp, Sweden as researcher, the KEHATI foundation as Environment and Social Safeguard Specialist; Managing Director with PT ReMark Asia and Conservation Manager with the Zoological Society of London (ZSL). He attended various trainings related to natural resource management at the University of Melbourne, the Swedish University of Agricultural Sciences, the University of Copenhagen, ProForest Oxford UK, the University of Eastern Finland and many more. He went to Florida University (USA) and CIRAD France as a visiting researcher. He participated and delivered presentations for international and national seminars as well as meetings. He published more than 30 scientific articles/publications including in peer-reviewed journals.

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Nathasya Marlinang is a team member of CRIC Urban Analysis for Cirebon. She is a young woman with great interest in Climate Change and Sustainable Development. She has recently graduated from Resources and Environmental Economics, at Bogor Agricultural University. During her university years, she became Indonesia's representative in Ecosperity Young Leaders Dialogue (National University of Singapore and Temasek Foundation), the 4th International Youth Symposium (Gujarat University, India), and the Winter Program (Kyoto University, Japan). She was also awarded as Resources and Environmental Economics' Most Outstanding Student in 2018

Anggraini Kristanti is a CRIC team member. She is currently pursuing a Bachelor degree in Resources and Environmental Economic at IPB Univesity. She enriches her environmental knowledge with a minor at the Conservation of Forest and Ecotourism Department through several courses in Conservation Education, Conservation Area Management, Nature Recreation and Ecotourism, and Environmental Service Management.

Devi Aldian Pratama is another team member. She is in her final stage as a student at the Faculty of Economics and Management, IPB University. She is also active as a BEM Manager at the Faculty association. Devi has been involved in the organization of several major events such as the Orientation Period for the IPB campus, the Scientific Paper Competition week and the National Economic Competition organized by IPB University.

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Anwar Hadipriyanto

Asih Budiati

Maria Serenade

Putra Dwitama

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We thank the contributors and reviewers of this report, Dr. Pascaline Gaborit and Emmanuel Rivéra from Pilot4Dev as well as Paolo Marengo and Danko Aleksic from ACR+ for their involvement.

Dr. Pascaline Gaborit

Emmanuel Rivéra

Paolo Marengo

Danko Aleksic

Furthermore, we would also like to thank the partners Sara Silva (ECOLISE), Prof. Youssef Diab (Gustave Eiffel University) and Kamlesh Kumar Pathak (AIILSG) for their continuous involvement in the CRIC Project. In addition, we would like to thank everyone else in the city of Cirebon, the public employees and contact points at the Ministry of the Environment and Forestry (MoEF) who have been involved in this project and allowed us to access the data needed to carry out this analysis. Finally, we would like to thank Laura Bernard and Hannah Ospina for their design and layout work.

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GLOSSARY

°C	Degree Celsius
3R	Reduce, Reuse, Recycle
ACCCRN	Asian Cities Climate Change Resilience Network
APBD	Anggaran Pendapatan Belanja Daerah (Local Government Budget)
B3	Bahan Berbahaya Beracun (Toxic and Hazardous Waste Balance Sheet)
BPS	Badan Pusat Statistik (Central Bureau of Statistics)
BPS Cirebon	Badan Pusat Statistik Cirebon (Central Bureau of Statistics of Cirebon City)
BPPPPD	Badan Perencanaan Pembangunan, Penelitian, dan Pengembangan Daerah (Regional Development Planning, Research and Development Agency)
CORR	Cirebon Outer Ring Road
DLH	Dinas Lingkungan Hidup (Environmental Agency)
DPPKB	Dinas Pengendalian Penduduk dan Keluarga Berencana (Population and Family Planning Control Office)
DPUPR	Dinas Pekerjaan Umum dan Pekerjaan Rakyat (Public Works and Public Housing Agency)
GRDP	Gross Regional Domestic Product
HC	House Connection
IPCC	Intergovernmental Panel on Climate Change
KLHS	Kajian Lingkungan Hidup Strategis (Strategic environmental assessment)
Musrenbang	Musyawarah Perencanaan Pembangunan (Community consultations on development planning)
NGO	Non-Governmental Organization
PDAM Cirebon	Pusat Daerah Air Minum (Cirebon Municipal Water Supply Company)
PROPER	Program Penilaian Peringkat Kinerja Perusahaan Dalam Pengelolaan Lingkungan (Company Performance Rating Assessment Program in Environmental Management)
RAD-GRK	Rencana Aksi Daerah-Gas Rumah Kaca (Regional Action Plan-Greenhouse Gases)
RAN-GRK	Rencana Aksi Nasional-Gas Rumah Kaca (National Action Plan-Greenhouse Gases)
RPJMD	Rencana Pembangunan Jangka Menengah Daerah (Local Government Medium-term Development Plan)
RPJMN	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
RPJPN	Rencana Pembangunan Jangka Panjang Nasional (National Long-term Development Plan)
SDGs	Sustainable Development Goals
SPM	Standar Pelayanan Minimum (Minimum Service Standards)
WWTP	Water Waste Treatment Plan

CHAPTER 1
Overview of Cirebon

1.1 General Description

Early development of the old city structure grew along with the construction of the Groote Postweg road by the Dutch Governor General Herman Willem Daendels in 1808-1810, in connecting from Anjer (Banten) to Penarukan (East Java), to facilitate the delivery of letters, trade commodities and strategic defense interests. At that time, the construction of the railway line with two train stations was built under Dutch colonization to facilitate and accelerate the flow of agricultural commodities and imported goods, namely, Kejaksan Station and Prujakan Station in the city center. Cirebon port was built in 1865, and in 1890 it was expanded with the construction of a port pond and warehouses.

Cirebon City is located in the northern coastal region of the eastern part of West Java Province. As a result, Cirebon is the main transportation route from Jakarta to West Java and Central Java, which passes through the north coast (Pantura). The location makes it an advantage for the city of Cirebon, especially in terms of transportation and communication. Administratively, Cirebon region consists of 5 districts, (namely Harjamukti District, Kejaksan District, Kesambi District, Lemahwungkuk District, Pekalipan District), and 22 subdistricts. Geographically, Cirebon is located at 108.33 East Longitude and 6.41 South Latitude on the north coast of Java Island bordering the eastern part of the city with Java Sea. Being in the eastern part of West Java, the city stretches from west to east ± 8 kilometers, north south ± 11 kilometers with an elevation above sea level ± 5 meters. Thus, Cirebon is a low-lying area with an administrative area of 37.35km2 or 3,735.8ha, where it has a land border with Cirebon Regency in the northern, southern and western part. The fact that it is located in a lowland area with a beach length of about ± 7 km and is an area downstream of several watersheds makes the city prone to annual inundation and flooding.

As a coastal area, the city is characterized by siltation, which is quite high in the coastal region, thus causing the land to emerge. The existence of the arising land has affected the total area of the city administration, which is estimated to have increased ± 75ha, spread across four subdistricts, namely: Panjunan subdistrict, Kasepuhan subdistrict, Lemahwungkuk subdistrict, and Pegambiran subdistrict.

1.2 Topography and Climatology

The topographic conditions of most of Cirebon are lowlands (altitude varies between 0-150m above sea level) and a small portion are highlands in the southern part of the city. Based on the slope percentage (Cirebon Regional Development Planning Board, 2010) the area of the city of Cirebon can be classified as follows:

- Slope of 0-3% in some areas of the city of Cirebon, except for Harjamukti Subdistrict.
- Slope of 3-8% in most areas of Kalijaga Subdistrict, a small portion of Harjamukti Subdistrict, Harjamukti District.

- Slope of 8-15% in part of Argasurya Subdistrict and Harjamukti Subdistrict.
- Slope of 15-25% in part of Argasurya Subdistrict, Harjamukti Subdistrict.

Some areas have relatively low groundwater level, with frequent seawater intrusion, therefore the water cannot be used as drinking water. The government continues providing clean water through the Cirebon Municipal Water Supply Company (PDAM), whose water source comes from the Kuningan Regency (DPPKB, 2018). To obtain drinking water sources, the use of dug wells, pump wells, and springs are common among the community to meet their daily needs.

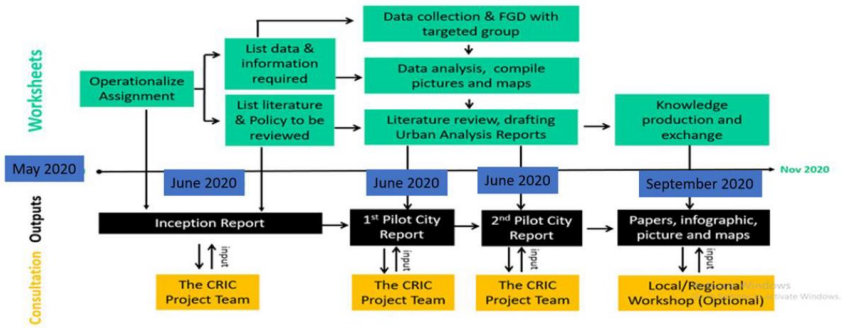
The type of soil that is scattered in the city of Cirebon makes it relatively easy to develop various types of vegetation. Cirebon is a tropical climate city with an average temperature of 28°C. Humidity ranges from ± 59%-84% with the highest humidity occurring in January-April around 80%-84% and the lowest humidity occurring in August with an average of 59%. Average annual rainfall in the city of Cirebon was predicted to reach 1,776 mm/year with the number of rainy days ± 118 days in 2019. Based on the Schmidt-Ferguson climate classification, the climate in the city of Cirebon is included in the type of climate C, with a value of Q ± 37.5% (percentage between dry and wet months). The rainy season falls in October-April and the dry season falls in June-September.

1.3 Methodology of Urban Analysis

Preliminary data collections were done by searching relevant development documents, published articles, statistical reports and media. Literature reviews were carried out based on these collected materials (Figure 1). Maps and pictures were collected from our contact persons in the municipality offices. We then developed questionnaires/opinion surveys as it is suitable for assessing the success of a strategy/element where there are different perspectives on system performance between different groups, namely: government officials, private sectors, civil society and university/research institutions.

In this study, a combination of quantitative and qualitative methods are utilized as they were deemed most appropriate for this analysis. A list of questions was then set up to gain insights and opinions on the characteristics of selected projects and the specific impact on benefits of CRIC-related activities. Three different types of questionnaires were prepared based on the target respondents who came from 4 stakeholder representatives (governments, private sectors, civil society and university/research institutions). The questionnaires were in Indonesian and were distributed using an electronic platform in google to the selected respondents to get their opinion in the first week of June. We used e-mail and WhatsApp to reach the respondents. We allowed two weeks for the respondents to fill out the questionnaires. Both closed-ended and open-ended questions were used in the survey and were divided into two parts. Part A consisted of general questions to identify the respondent's profile and Part B was intended to gain views and opinions from professionals. Some respondents were suggested by the Head of BPPPPD (Regional Development Planning, Research and Development Agency) that may understand well the objectives of CRIC urban analysis.

Figure 1 - Flow of Urban Analysis Methodology



Source: Authors

The discussion which related to the topic of CRIC Urban Analysis is conducted through organized virtual meetings along with the government officials. For further clarification and discussion, an in-depth interview was done by phone for all related respondents.

1.4 Demographic Characteristic

1.4.1 Population

The population of Cirebon in the last six years has continued to increase. It is recorded that in 2018 Cirebon had a total number of 316,000 inhabitants living in 5 district areas. In the subsequent year, the population increased by 0.9%, reaching the number of 319,000 inhabitants with a population density of 8,500 per km^2.

Table 1 - Total Population of Cirebon City in 2013-2019

District	2015	2016	2017	2018	2019
Harjamukti	105,987	107,019	107,991	109,005	110,050
Lemahwungkuk	54,788	55320	55,827	56,353	56,892
Pekalipan	30,013	30308	30,588	30,880	31,179
Kesambi	72,819	73525	74,197	74,894	75,611
Kejaksan	43,887	44314	44,722	45,145	45,580
Total	307,494	310,486	313,325	316,277	319,312

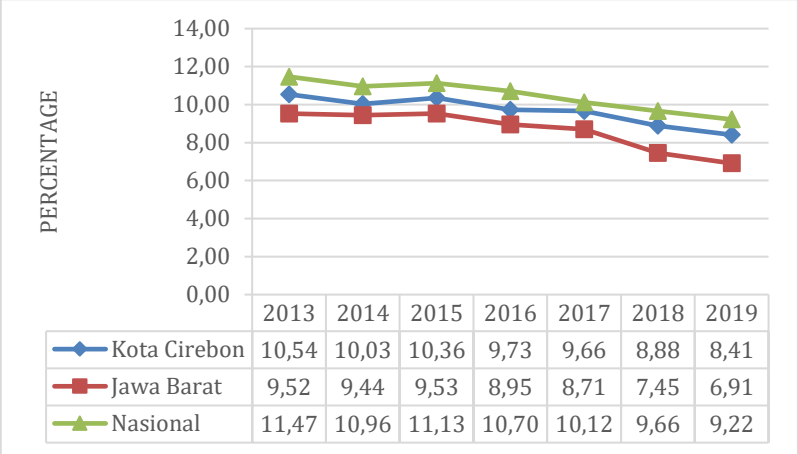
Source: BPS (2020)

1.4.2 Poverty Rate

Cirebon, as one of 27 regencies or cities in West Java, contributes to the number of poor populations in West Java. To measure poverty, the Central Bureau of Statistics uses the concept of ability to fulfil their basic needs (basic needs approach) to meet the basic food and non-food needs as measured by expenditure. The population of people living in poverty

has an average monthly per capita expenditure under the poverty line. Based on BPS data, in the span of 7 years from 2013-2019, Cirebon has significantly decreased its rate of poverty by 2.13%. In 2017, the number of people living in poverty in Cirebon was 30.19 thousand people (9.66%) and in 2018 it dropped to 28.03 thousand people (8.88%), and still continued to decrease to 26.80 thousand people (8.41%) in 2019.

Figure 2 - Poverty Rate in Cirebon City, West Java Province, and National Level 2013-2019



	2013	2014	2015	2016	2017	2018	2019
Kota Cirebon	10,54	10,03	10,36	9,73	9,66	8,88	8,41
Jawa Barat	9,52	9,44	9,53	8,95	8,71	7,45	6,91
Nasional	11,47	10,96	11,13	10,70	10,12	9,66	9,22

Source: BPS (2020)

1.4.3 Land Condition

The determination of Cirebon as the development of a metropolitan area with 319.312 inhabitants will certainly lead to changes in land use, which is a problem because there are still several laws and regulations as a follow-up to regional regulations that have not been drafted. The regulation on managing administrative sanctions for violations of spatial planning and imposition of incentives and disincentives for spatial planning room soon needs to be drafted. Apart from that, there are several prepositions that have become the cause of problems in building construction in Cirebon, namely, irregularity in dimensions, orientation and shape; the density that is not in accordance with the provisions in the spatial plan; and nonconformance with technical requirements of structural systems, lightning protection, ventilation, lighting, sanitation, and building materials.

Nearly 20% of land in Cirebon is used as rice field area (Table 2). This condition becomes a threat to future agricultural businesses as well as food security for the people in the area.

Table 2 - Area by Main Land Use 2018

District	Non Agricultural Land Area (Ha)	Rice Field Area (Ha)	Dry Land Area (Ha)
Harjamukti	1,102.27	145.56	513.17
Kesambi	723.40	34.99	45.96
Lemahwungkuk	660.10	20.79	45.10
Pekalipan	156.15	0	0.85
Kejaksan	309.09	0	51.91
Total	2 951.01	201.34	656.99

Source : IKPLHD Cirebon 2019

Note: 0 = no data available

1.4.4 Life Expectancy

Life Expectancy is an indicator to measure the ability to survive longer. Life expectancy at birth is interpreted as an estimate of the average lifespan of the population with the assumption that there is no change in the pattern of mortality according to age. In 2018, Cirebon's life expectancy was 71.99 years and increased in 2019 to 72.13 years or an increase of 0.27 years.

1.4.5 Health Index

In 2016, the Cirebon health index reached 79.74 and was constantly increasing until 2018 at point 79.98. Based on data from the Health Agency (2019), ten diseases with the most cases in Cirebon are Primary Hypertension (31,073 cases), Myalgia (27,349 cases), Dyspepsia (23,176 cases), Acute Nasopharyngitis/Common Cold (25,784 cases), Diarrhea and Gastroenteritis (12,194 cases), Fever with unknown cause (6,173 cases), Acute upper respiratory infection not specific (4,465 cases), Acute pharyngitis (2,231 cases), Lung Tuberculosis AFB(+) with/without culture examination (1,494 cases), and unspecified dermatitis/eczema (2,897 cases).

1.5 Social Structure

Human Development Index (HDI) components are life expectancy at birth, expected years of schooling, and expenditure per capita. HDI in Indonesia shows an improving trend. This is reflected by the Indonesian Gender Development Index (GDI) in 2018, which is at the level of 90.99 out of 100. In 2019, Indonesia's HDI reached 71.92. As shown above, Cirebon's HDI and GDI are higher than that of Indonesia. Cirebon is the region with the highest HDI level in the Ciayumajakuning areas (Cirebon, Indramayu, Majalengka, and Kuningan). The GDI & HDI levels approaching 100 indicates a smaller development gap between men and women.

Table 3 - Gender Development Index (IPG) and Cirebon City Components, 2017-2019

Year	UHH (Year)		HLS (Year)		RLA (Year)		Per capita expenditure (Thousand Rupiah)		IPM		IPG
	male	female	male	female	male	female	male	female	male	female	
2017	69.87	73.74	12.76	13.37	10.42	9.30	15,037	10,662	77.59	72.89	93.94
2018	70.00	73.87	12.77	13.38	10.43	9.31	15,484	10,933	77.95	73.23	93.94
2019	70.14	74.00	12.78	13.40	10.47	9.31	15,749	11,497	78.24	73.82	94.35

Source: BPS, Kota Cirebon

Note:

UHH: Umur Harapan Hidup saat lahir (Life expectancy at birth)

HLS: Harapan Lama Sekolah (Length of school expectancy)

RLS: Rata-rata Lama Sekolah (Average length of school)

IPM: Indeks Pembangunan Manusia (Human Development Index)

IPG: Indeks Pembangunan Gender (Gender Development Index)

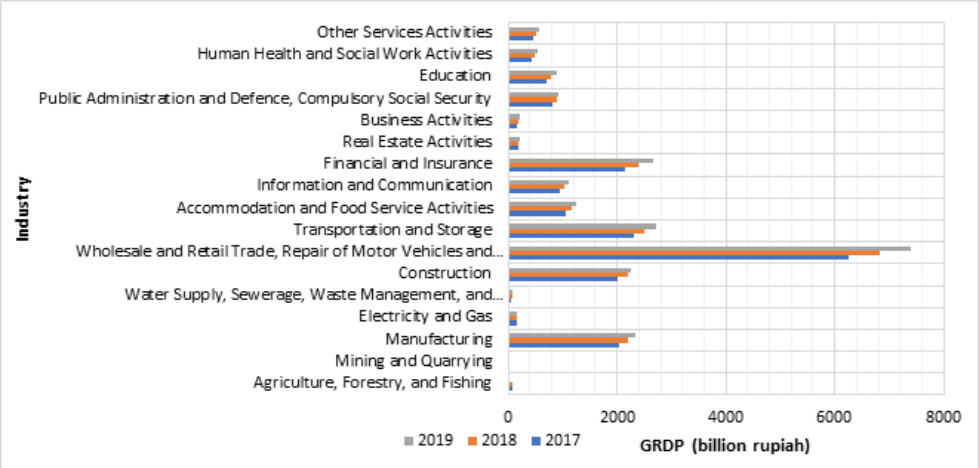
1.5.1 Unemployment rate

Unemployment is prevalent and inevitable among Cirebon as an urban center. In 2013, the unemployment rate in Cirebon was 9.02%. In the following year, it increased to 11.02%. In the subsequent year, the open unemployment rate inched up to a record high of 11.28% in 2015. The unemployment rate fell by 1.99% to 9.29% in 2016 and persisted with t 9.29% in 2017. The rate has been consistently declining since 2016, and by the end of 2018, the overall open unemployment rate reached the percentage of 9.06 (RPJMD, 2018-2023).

1.6 Economic Structure

Gross Regional Domestic Product (GRDP) is one of the indicators to illustrate the economic development of a region in a certain period. GRDP is calculated with two types of prices, the current prices and the constant prices. Current prices in GRDP illustrate the added value of goods and services calculated at current period prices while constant prices in GRDP illustrate the added value of goods and services that are calculated in the base year.

Figure 3 - Gross Regional Domestic Product at Current Market Prices by Industry in Cirebon 2017–2019



Source: BPS (2020)

Cirebon's current prices GRDP value in 2019 (Figure 3) reached 23.46 trillion rupiah. The value of GRDP has increased by 1.82 trillion rupiah ($121 thousand) from 21.63 trillion rupiah ($1.46 million) in 2018. Not only does the quantity of goods and services produced by the city increase, but also inflation rates increase, leading to a higher value of GRDP. The biggest share in the formation of the GRDP in 2019 came from the Wholesale and Retail, Car and Motorcycle Repair business fields which reached 31.54%, and the second largest role was the Transportation and Warehousing business field by 11.61%.

The city is known for food crops producers consisting of rice, corn, cassava, sweet potatoes and mung beans, as well as being the third largest mango producer in West Java Province. From the fishery sector, Cirebon contributes 1.89% of the fishery production in West Java with the total production from the marine fishery category being 4,378.10ton. However, its contribution to GRDP in the category of agriculture and fisheries sector is below 5%.

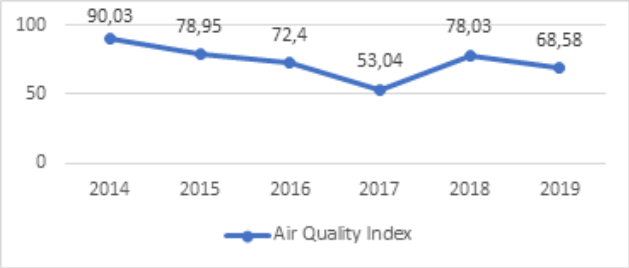
1.7 Environmental Data

The Environmental Quality Index value of Cirebon is 51.96. This value, when referring to the weight determined by the Ministry of Environment and Forestry, is in the "very low" category or means that it has not met the criteria for a good and healthy environment. This value is obtained from a combination of the following indicators: river water quality (56.92), land cover index (35.77), and air quality index (68.58).

1.7.1 Air Quality

Population density in Cirebon is relatively high with dominant activities that contribute to the air quality pollution such as household activities, transportation, industry, and office activities. In 2019, the air quality index was 68.58 (Figure 4). In monitoring the quality of each of these activity categories, Cirebon's city government has determined the air quality monitoring location points in housing, industry, highways and office areas.

Figure 4 - Air Quality Index in Cirebon City 2014-2019



Source: IKLH 2019

1.7.2 River Water Quality

The rivers in the city of Cirebon can be classified as end drainage channels. In several locations, there are branches of the river which empties into the Kali Jaga, Kasunean, and Kedungpane rivers, which function as primary and secondary drainage channels. In general, the shape of the existing watershed is tapered and resembles a leaf, indicating a river like this has a relatively small flood discharge which is rarely abundant in the surrounding area. This is because the concentration time of the river is long. As Cirebon is located close to rivers, it enjoys a marine life. Many residents use the watershed as a residential area. There are an increasing number of houses being constructed on the riverbanks. This has resulted in a decline in the condition of the river, with a large amount of household waste generated, which eventually burdens the rivers around it.

In the calculation of the Cirebon City Water Quality Index (IKA) 2019, an analysis was carried out through a laboratory test of 13 sampling points representing three main rivers in the area. The parameters to be analyzed are: pH, BOD, COD, TSS, TDS, total phosphate, DO, fecal coli, NH_3, and NO_3. The water quality status of 3 rivers with a total sampling point of 13 sampling points and 26 water quality analysis found that the river quality status is qualified with a mild pollution level and moderate pollution level.

Table 4 - Calculation of Water Quality Index for Cirebon City

No.	Status	Total	Percentage	Coefficient	Value
1	Qualified	11	42,31	70	29,62
2	Lightly polluted	13	50,00	50	25,00
3	Moderately polluted	2	7,69	30	2,31
4	Heavily polluted	0		10	-
Water Pollution Index					56,92

Source: IKLHK (2019)

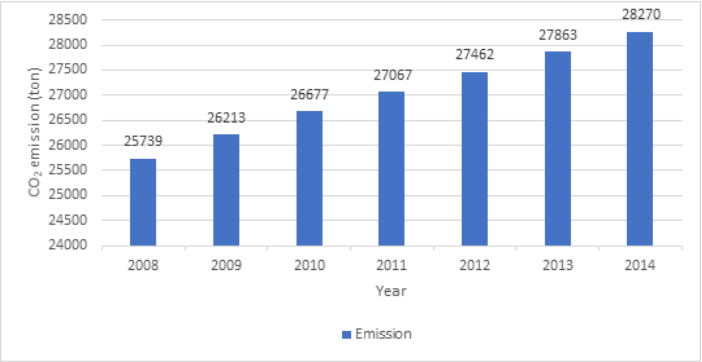
1.7.3 Main Source of Pollution

The air in Cirebon is still below the threshold level, so it is still safe to breathe. However, the source of air pollution is dominated by the transportation sector. There are two factors that cause air pollution in Cirebon. First, the combustion of fuel from motorized vehicles. It was predicted by the Transportation Agency that there would be 176,844 motorcycles, 37,558 cars, and 15,530 freight cars in 2020. Second, coal loading and unloading activities at Cirebon Port also impact air quality. Cirebon is one of the ports that becomes part of the chain of coal distribution in West and Central Java. Cirebon has an important role both as a regulator and as an operator in securing coal supplies for the needs of the textile and cement industries in West Java and Central Java.

1.7.4 Greenhouse Gases Emission

According to Sign Smart in 2014, there were 28,270 tons of CO_2. from the waste sector (Figure 5). However, the data displayed is still limited to the waste sector only. Meanwhile, in other cities, data exists on emissions from other sectors, namely, energy, Industrial Processes and Product Use (IPPU), agriculture, and land. Cirebon government is currently at the stage of carrying out a GHG inventory but has not yet carried out the calculation of GHG emission reduction. The reasons raised when conducting in-depth interviews were the lack of funding and knowledge in calculating the emission baseline.

Figure 5 - Emission from Waste Sector in Cirebon



Source: KLHK

1.7.5 Waste Management

As researched by Supardi (2013), certain areas in Cirebon have not yet been found in terms of the completeness of their facilities and utilities, moreover handling the unresolved climate. The statement is supported by the fact that Cirebon still has environmental problems that cannot be resolved, especially the waste problem (Wulan, 2012). Cirebon city and related agencies are considered not able to provide effective policies to liberate Cirebon from garbage problems (Rahmawati, 2017). The following table includes the data obtained from the results of research related to the incompatibility of the volume of waste with the number of landfills in Cirebon.

Table 5 - Waste Volume of Cirebon City in 2019

Subdistrict	Quantity	Unit
Kejaksan	320.31	m^3/day
Emahwungkuk	157.81	m^3/day
Harjamukti	85.87	m^3/day
Pekalipan	209.3	m^3/day
Kesambi	129.37	m^3/day
Total Municipal Waste	902.66	m3/day
Volume of waste transported to the landfill	747	m^3/day
Number of waste bank	30	unit

Source: Cirebon Environmental Agencies

The amount of waste produced by each district is not directly proportional to the number of inhabitants. For example, Harjamukti subdistrict is the most populous subdistrict but produces the least amount of waste, Pekalipan subdistrict is the subdistrict with the lowest population but produces the second highest numbers of waste. In terms of regional law enforcement, Cirebon has Regional Regulation Number 4 of 2018 concerning waste management which regulates the rights and obligations of the community as waste producers including rules and sanctions for anyone who violates this and deliberately throws away by littering.

1.7.6 Restoration of Marine Coastal Ecosystems

Restoration of coastal seas is an aspect that must be considered by Cirebon City Government considering that the city is on the coastal shore. In the coastal area, the water is brown due to the effect of silting by the sedimentary mud brought by the four river systems and other rivers from the Cirebon Regency area. Primary rivers that go through Cirebon are included in the Cimanuk–Cisanggarung River Basin, which is a river area between the provinces of West Java and Central Java. On the other hand, this phenomenon increases the physical area of the city but makes additional land for illegal housing development. This condition causes the environment around the coast to tend to be disorganized, slum, and damage the coastal ecosystem. As a result, fishermen are getting further away from the fishing area because of the ecological habitat where the marine ecosystem is lost or damaged.

In 2016, it was estimated that the area of mangrove coverage in Cirebon was only 4.5ha, which was spread across 4 coastal subdistricts in Cirebon. The area of mangrove vegetation in the municipality experienced a decline in 2016, where the remaining area was only 40% of the area in 2015, which was 11.50ha. Spatially, the maximum area of mangrove land is in Pegambiran subdistrict, with the remaining 2ha in Lemahwungkuk District. In addition, the density of mangrove vegetation in 2016 experienced a degradation of up to 50% of the total infiltration of mangrove vegetation in 2015. The maximum degraded density occurred in Pegambiran and Kebon Baru subdistrict, which reached 20 thousand trees/ha.

The focus of environmental management is to address household waste, whereas, for marine waste itself, there is no specific technology or program implemented by Cirebon's government. The management and restoration of marine coastal ecosystems in Cirebon turned out to still be negative as the city government and the agencies responsible are not able to solve the problem of garbage scattered around the coast. In addition, other failures included the agency still not being able to foster environmental awareness for the people living around the coast, so people were still apathetic and considered that the situation was something that did not have an impact on ecosystem damage.

1.7.7 Raised Land

As mentioned, Cirebon is located on the Northern coast of Java Island, in the Eastern part of West Java with an area of 3,810ha (RTRW Kota Cirebon, 2012). In the coastal area, there is a fairly high siltation due to continuous sedimentation, therefore soils are formed. The existence of this land affects the area administratively. The area of land arising in Cirebon until 2014 reached around 100ha, from 3,835ha to 3,935ha (Noorrahmah et.al, 2014). Embossed land on the coast of Cirebon City is spread over 2 subdistricts, namely the

Kejaksan District and the Lemahwudul District. Embossed land in Kejaksan District's Office is located in 2 subdistricts, namely Kebonbaru Subdistrict and Kesunden Subdistrict. Embossed land in Lemahwudul District is located in 4 subdistricts, namely Panjunan, Kesepuhan, Lemahwutut, and Pegambiran subdistricts. When this natural phenomenon of raised land occurred in Cirebon and increased the area of the city, the people around the coast had utilized the arising land as arable land. This land cultivation permit was obtained from the local subdistrict head, but with several conditions. Among these conditions are that the community has the right to use the land, but it cannot be used as private property and traded or rented. However, the community violated these requirements as they traded the land. In addition, there are also many illegal settlements that are built permanently by the community as their residence.

Local residents who are impacted by floods as a result of landfill operations on the coast of Cirebon can feel the detrimental effects of embossed land in the area. The same goes for fishermen whose income is reduced because of the reducing fish population due to the decrease of mangrove trees where the fish live. Lack of public knowledge about natural resource management in a sustainable manner like this can be detrimental without realizing it.

1.8 Disaster risks

Based on the IRBI (Indonesia's Disaster Prone Index) in 2018, Cirebon is included in the high disaster risk region with a score of 172.76. The methodology of the Disaster Prone Index is analyzed by way of; 1) Data Classification from the results of a risk study consisting of data: (a) hazards per type of disaster, (b) lives exposed per type of disaster, (c) rupiah losses per type of disaster, (d) environmental damage (ha) per type of disaster and (d) local government capacity per district / city; 2) Weighting; and 3) Scoring.

According to BNPB's Disaster Risk Index data, Cirebon is an area prone to floods, fires, extreme weather, drought, and earthquakes. A high level of risk for the disasters mentioned is pointed out in the 2018 Disaster Risk Index as it appeared more than 10 times throughout the year (Table 6). Geographically located in a lowland area that has a coastal area with a beach length of ± 7 km and is an area that is downstream of several watersheds makes Cirebon prone to inundation and flooding.

Table 6 - Disaster Risk in Cirebon City

No.	Disaster Categories	Level of Risk	Score	Number of events in 2018
1	Flooding	High	27.2	13
2	Fire	High	27.2	11
3	Extreme weather (tornado wind)	High	16.5	15
4	Landslide	Medium	9.1	8

5	Drought	High	18.1	62
6	Volcanic eruption	Medium	5.8	n/a
7	Earthquake	High	17.5	n/a

Source: Cirebon City Disaster Risk Assessment Document (2018)

During the rainy season, floods often occur. Usually, the flood inundates the residents' houses for about five hours with the water level reaching 1.5mand then receding. According to BMKG predictions, extreme weather anomalies will arise if the rainy season becomes shorter but of high intensity which allows the dry season to get longer. The possibility of the risk of catastrophic floods and drought will be a threat of disaster for Cirebon in 2020.

This concern became a reality on Saturday, February 8, 2020, when heavy rains made the water discharge in the Kalijaga River, Sumurwuni subdistrict, and Argasunya District, which increased and resulted in the collapse of the 15-meter-long bridge connecting RT 02 and RT 03 neighborhood[1].

1.9 Spatial and Infrastructure Condition

Based on several applicable policies, namely, Presidential Decree Number 28 of 2012 concerning Java-Bali Island Spatial Planning, West Java Province Regional Regulation Number 22 year 2010 on Province of The West Java Spatial Plan 2009-2029, and West Java Province Regional Regulation Number 12 year 2014 on Management of Development and Development of Metropolitans and Growth Centers in West Java, the following can be concluded:

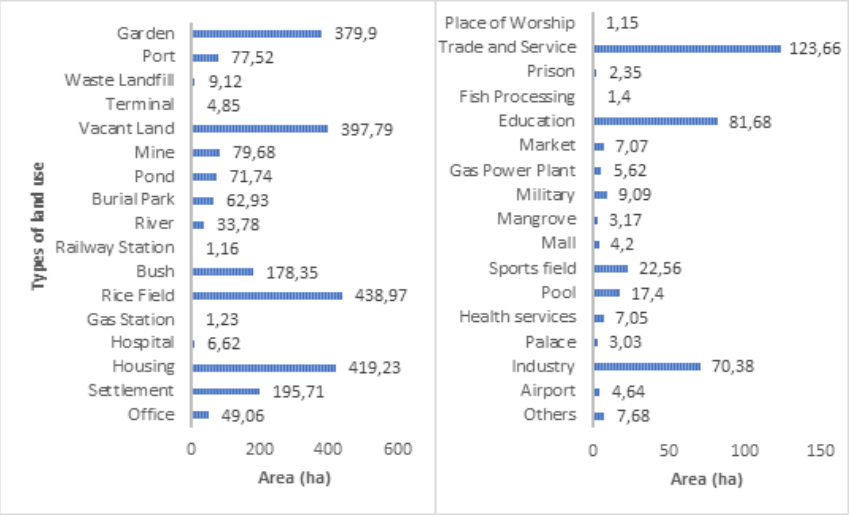
- Based on the objectives of spatial planning: Cirebon has a goal of becoming a regional service center based on trade and services supported by tourism, education as well as cultural sectors which are based on religious values.
- Based on the plan or strategy, the path and disaster evacuation space includes:
  a) Disaster evacuation route for disaster evacuation rooms
  b) Establishing zones prone to natural disasters
  c) Control the development of cultivation activities built in areas prone to natural disasters, carry out efforts and adapt to disaster mitigation through the establishment of locations and routes for disaster evacuation and the construction of disaster monitoring facilities.
  d) Rehabilitation of coastal and small island ecological preservation areas and coastal disaster protection areas.

1https://news.detik.com/berita-jawa-barat/d-4893094/diterjang-banjir-jembatan-sungai-kalijaga-di-cirebon-ambruk

- Based on the spatial plan related to disasters: Cirebon is a tidal-prone area, flood prone area, and fire-prone area.
- Based on the service center system: Cirebon as the center of national activities in Ciayumajakuning City which stand for Cirebon, Indramayu, Majalengka, and Kuningan.

Regional spatial planning is regulated by Regional Regulation Cirebon City Number 8 year 2012 on Cirebon City Regional Spatial Plan in 2011-2031. RTRWK's position is a guideline in preparation of Regional and Service Area Detailed Plans; preparation of Sectoral Special Plans; preparation of regional mid-term development plans; a compilation of plans and allocations for city development; determining the location and function of the space for investment; and spatial planning of the city's strategic area in years to come.

Figure 6 - Land allotment in Cirebon City based on the Cirebon City Regional Spatial Plan 2011-2031



Source: RPJMD 2018-2023

Infrastructure in Cirebon, in general, has been almost evenly distributed in each region, however, to further increase the economic activities of the community, especially in the southern region (Harjamukti District) it needs to be further improved. Road infrastructure is classified into 3 groups, namely, the national, provincial, and city roads.

1.10 Social Infrastructure and Service

Cirebon is located in a very strategic position which is supported by the completeness of urban infrastructure. This condition has allowed for growth and development of various kinds of developmental activities in the city of Cirebon. All types of transportation in the city, including land, sea, and air transportation, are integrated to support the development of Cirebon. There are two train stations (Kejaksaan Station and Prujakan Station), a port, and an airport (Cakrabhuwana Airport). Furthermore, there are typical Cirebon pedicabs as a means of public transportation as well as a means for city tours.

Another asset that includes social services and infrastructure is healthcare facility provision. The number of public health centers (puskesmas) are equal in each Cirebon district. It can be assumed that each subdistrict has health facilities that support the necessity of the

community, as well as expecting that the number is also in line with the good quality that can be offered.

1.11 Climate Change and Disaster Risk Reduction

Based on the Climate Change Vulnerability Index and Data Information System (SIDIK), Cirebon has 4 subdistricts that are not in vulnerable categories, 5 subdistricts that are somewhat in vulnerable categories, and 13 subdistricts that are in quite vulnerable categories. The level of vulnerability to climate change is determined by indicators that affect the system's exposure, sensitivity, and adaptive capacity. These 3 factors change over time as development activities and adaptation efforts take place. The level of exposure and sensitivity can be reflected by biophysical and environmental conditions, as well as socio-economic conditions.

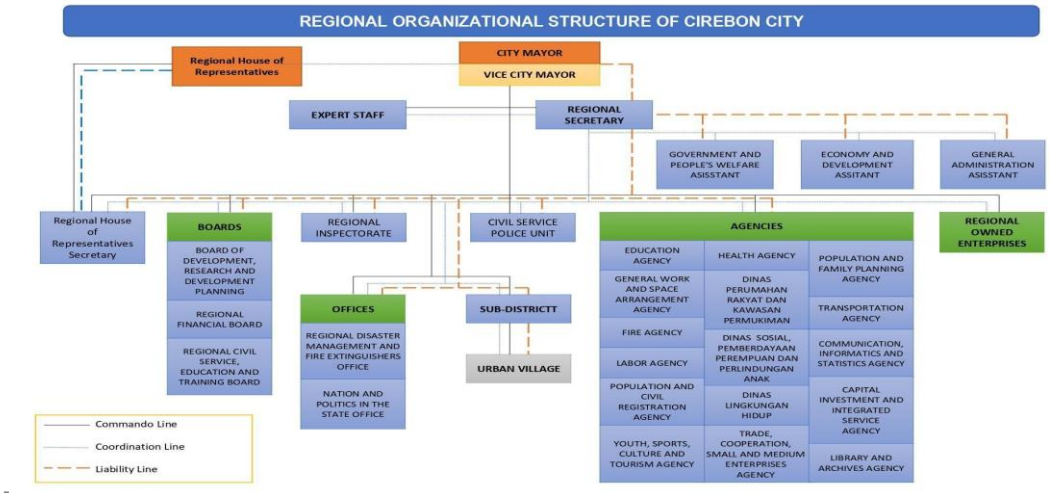
In accordance with the mandate of Presidential Decree Number 16 and 17 of 2011, in order to minimize the impact of climate change, there is a need for a regional action plan, which has been stated in the program of activities of the related sectors or offices in Cirebon. While the implementation to mitigate climate change has not been carried out on a wide scale, the city of Cirebon has started making efforts to build pilot urban community, enhance green open spaces, and other programs initiated by the following local agencies:

- The Environmental Agency: there are activities to control the impacts of climate change with the outputs of the climate subdistrict (Proklim subdistrict Program (Figure 7)) and Greenhouse Gas Inventory, Development of Recycling Center for organic and non-organic waste, waste bank.
- The Food, Agriculture, Marine, Fisheries Agency: able to initiate the Women Farmers Group Program (Kelompok Wanita Tani) for food security (Figure 7).
- The Public Works and Spatial Planning Agency (PUPR): drainage as an adaptation for flood control.
- The Public Housing and Settlement Areas Agency (PRKP): construction and maintenance of parks and trees.
- The Transportation Agency: Public Street Lighting (PJU): supported by solar energy and Bus Rapid Transit.

Figure 7 - Proklim Climate Subdistrict Program and Woman Urban Farmers Group

- Cirebon does not yet have an early warning disaster system. The municipal government provides an Emergency Call Single Number Service (NTPD) 112 for handling various emergencies, namely, fires, riots, accidents, natural disasters, handling of health problems, disturbances to security and public order, among others.
- Until now, the Regional Regulation related to disaster is Regulation No. 74 of 2012 concerning General Guidelines for Disaster Management and Refugee Management in Cirebon, but this guard has not covered all aspects that need to be regulated in disaster preparedness efforts. The Regional Secretariat through the Government Administration Section and coordinating with the relevant regional apparatus will immediately draw up Amendments to Regulation Number 74 of 2012 concerning General Guidelines for Disaster Management and Refugee Handling in Cirebon and Operational Standards Procedures during pre-, disaster events, and post disasters.
- 1.12 Urban Governance
- The governmental structure is regulated in Regional Regulation Cirebon Number 7 year 2016 on Formation and Structure of Regional Apparatus of Cirebon. In 2019, the City Government of Cirebon employed 4.812 people who work as civil servants. Based on gender, the ratio of civil servants is 45,45% male and 54,55% female. Based on the level of education, civil servants with a bachelor level of education reached 66,8%.

Figure 8 - City Government Structure



Source: Authors

In line to succeed with a climate resilient city program, Cirebon government has recorded and tracked some local community-based development actions. One of the collaborative actions started from Cirebon Environment Agencies in 2018 by supporting a Climate Urban Community (Proklim) in RW 08 Merbabu Asih, Harjamukti Subdistrict which initiated by Secerah Pagi NGO and gets the support from PT. Pegadaian, a state-owned enterprise[2].

The effort to take initiative action in collaborating with local NGOs as well as the support from the central government might lead to a beneficial impact for Cirebon in the future.

[2] http://kecharjamukti.cirebonkota.go.id/tag/rw-08-merbabu-asih/

Therefore, the government continues to develop and improve several other efforts in various sectors by collaborating and initiating action, such as:

1. Relawan TIK (Information and Communication Technology Volunteers) that focus on building human resource capacity on digital literacy knowledge and skills, online expression and cyber governance[3].
2. The installation of an Accelerograph device or a Strong Earthquake Network Tool by BPBD in Cirebon to strengthen the Disaster Mitigation System. This tool is a ground vibration detector that looks like a bird cage and is directly connected to the central BMKG in Jakarta[4].
3. Additional supply of drinking water from SPAM Regional Jatigede by signing new cooperation contracts carried out with the Central Government through the West Java Provincial Government Housing and Settlement Service[5].

[3] https://www.rtikcirebonkota.id/
[4] https://www.instagram.com/p/CF1pjwegNVA/ (BPBD Cirebon Official Account)
[5] https://www.cirebonkota.go.id/pemda-kota-cirebon-teken-kontrak-kerjasama-penyediaan-air-minum/

CHAPTER 2
Policies and Strategies for Climate Resilient and Inclusive City

2.1 Nation-Wide Policies, Strategies and Target

In relation with city governance structure and development program, here we discuss the connection with national policies. The development policy in the 2005-2025 RPJPN poses a challenge for the Cirebon government to increase regional competitiveness through competitive economic advantages, human resources, and high science and technology capabilities. RPJMN 2020-2024 has mainstreamed the SDGs. The targets of the 17 SDGs and their indicators have become an integral part of Indonesia's 7 development priority agendas going forward. The seven national development priorities are used as a reference in the preparation of the 2018-2023 Cirebon RPJMD. For the next 5 years, these include:

1. Strengthening economic resilience for quality growth.
2. Develop areas to reduce inequality and ensure equality.
3. Increase quality and competitive human resources.
4. Build the culture and character of the nation.
5. Strengthen infrastructure to support economic development and basic services.
6. Improve the environment, increase resilience to disasters and climate change.
7. Strengthening political, legal, defense and security stability and transformation of public services.

Urban climate adaptation and resilience policies and strategies are one of the priority sectors listed in the 2020-2024 RPJMN. The following are some of the programs listed in the 2020-2024 RPJMN:

1. Mainstreaming of disaster management and climate change adaptation through:
   a) Increasing the resilience of the northern and southern regions of the Java-Bali Island.
   b) Increasing the handling of coastal abrasion in coastal areas and archipelagic areas.
   c) Increased forest conservation.

2. Fulfillment of Disaster Minimum Service Standards through:
   a) Capacity building of local government, community and disaster logistics.
   b) Community adaptation to climate change in disaster-prone areas based on community local wisdom.

c) Increased structural and non-structural mitigation investments for disaster risk reduction.

According to the 2020-2024 RPJMN Development Matrix, there are several national priority projects in the Development of Large Cities, Medium Cities, Small Cities (West Java) in Cirebon, namely:

1. The SPALD-T Settlement Scale with indicators in the form of number of house connections served by SPALD-T Settlement Scale (SR) with a total indication of funding of IDR 930 billion (USD 63.6 million) with the Settlement Infrastructure Development and Development Program with the implementing agency of the Ministry of PUPR; DAK; APBD; Public.
2. The City Scale SPALD-S CSR (IPLT) with indicators in the form of the number of IPLT development and rehabilitation (units) with a total indication of funding of 14.60 billion rupiah with the Settlement Infrastructure Development and Development Program implemented by the Ministry of PUPR.
3. The City-scale Waste Management System (TPA) with indicators in the form of the number of newly built TPAs (units) with a total indication of funding of 381.20 billion rupiah with the Settlement Infrastructure Development and Development Program and its executors, namely the Ministry of PUPR, PPP, APBD.
4. The Area Scale Waste Management System (TPST) with indicators in the form of the number of TPST built (units) with a total indication of funding of 71.93 billion rupiah with the Settlement Infrastructure Development and Development Program and implemented by the Ministry of PUPR.
5. The Community-Based Solid Waste Management System (TPS3R) with indicators in the form of the number of TPS3R built (units) with a total indication of funding of 22 billion rupiah with the Settlement Infrastructure Development and Development Program with the implementing agencies are DAK, Ministry of PUPR, APBD.
6. The Provision of raw water in urban areas with indicators in the form of additional raw water discharge in urban areas (m3 / sec) with the Water Resources Management Program with the implementing agency is the Ministry of PUPR.

Furthermore, a national action plan for climate change adaptation called RAN-API was created to implement a system of development that is sustainable and resilient to climate change impacts. The strategic targets of the National Action Plan for Climate Change Adaptation (RAN-API) are directed at: (i) building economic resilience, (ii) building (social) systems that are resilient to the impacts of climate change (resilience of living systems), (iii) maintaining sustainability of services, ecosystem environmental services (ecosystem resilience) and (iv) strengthening the resilience of special areas in cities, coastal areas and small islands. Each sector of resilience in the RAN-API has targets and strategies as listed below.

Increasing Disaster and Climate Resilience is carried out by strengthening the convergence between disaster risk reduction and climate change adaptation. The policy directions for national priorities for building the environment, increasing disaster resilience and climate

change consist of: (a) Increasing the Quality of the Environment; (b) Increasing Disaster and Climate Resilience; and (c) Low Carbon Development.

Strategies for realizing the Policy Direction for Increasing Disaster and Climate Resilience in the 2020-2024 RPJMN include:

1. Disaster Management, which is implemented by: (a) Strengthening Disaster Data, Information and Literacy; (b) Strengthening System, Regulation and Management of Disasters; (c) Strengthening Disaster Risk Reduction Plans through National and Regional Disaster Risk Reduction Action Plans which will be integrated with the Climate Change Adaptation Action Plans; (d) Improving Disaster Mitigation and Management Infrastructure; (e) Integration of cooperation between regions related to disaster risk-based policies and spatial planning and implementation of disaster management; (f) Strengthening Disaster Emergency Management; (g) Implementation of rehabilitation and reconstruction in disaster-affected areas; (h) Strengthening the integrated multi-threat disaster mitigation system, especially through strengthening INATEWS and MHEWS; and (i) Strengthening disaster preparedness through social re-engineering of multilevel disaster resilience, especially at the family, community and village levels; and (j) Increasing the development and innovation of alternative schemes for disaster management financing.
2. Increasing Climate Resilience, which is carried out by implementing the National Climate Change Adaptation Plan (RAN-API) in priority sectors, through: (a) Protection of the Vulnerability of the Coastal and Marine Sector, both in the form of strengthening ecosystem-based adaptation infrastructure, community awareness, development technology, as well as diversification of the livelihoods of coastal communities; (b) Protection of Water Security in Climate Risk Areas, through increased supply of raw water and protection against the destructive potential of water; (c) Protection of Food Security against Climate Change; and (d) Protection of Public Health and Environment from the Impact of Climate Change.

2.2 City-Wide Policies, Strategies and Targets

The objectives of the Cirebon City RPJMD 2018-2023 are:

1. To examine the achievements of the regional development performance of the City of Cirebon in the period 2013-2018.
2. To outline the Vision and Mission of the Regional Head through the formulation of goals, targets, strategies, policies and programs carried out effectively and efficiently and taking into account aspects of equity and justice.
3. To realize regional development that prioritizes regional development, pro poor, pro job, pro-growth and pro-environment by taking into account regional potentials.
4. To ensure the interrelation and consistency between planning, budgeting, implementation and control and evaluation of regional development.

5. To ensure the creation of integration, synchronization and synergy of regional development planning between Cirebon and the surrounding area, West Java Province, and the Central Government.

6. To realize the use of resources efficiently, effectively, fairly and sustainably.

In addition to paying attention to harmony with the West Java development mission as outlined in the West Java Regional Medium-Term Development Plan 2018-2023, the Cirebon medium-term development mission also harmonized with Nawa Cita, namely:

- Realizing the Quality of Cirebon Human Resources who are Competitive, Cultured and Excellent in All Fields, in accordance with National Priority 1: Strengthening economic resilience for quality growth; National Priority 3: Increasing quality and competitive human resources; and National Priority 4: Building the culture and character of the nation.

- Realizing Clean, Accountable, Authority and Innovative Governance, in accordance with National Priority 3: Increasing quality and competitive human resources; and National Priority 4: Building the culture and character of the nation.

- Improving the Quality of Public Facilities and Infrastructure with an Environmentally Sound, in accordance with National Priority 2: Developing areas to reduce gaps; National Priority 5: Strengthen infrastructure to support economic development and basic services; and National Priority 6: Building the environment, increasing disaster resilience and climate change.

- Creating a conducive public order and order, in accordance with National Priority 1: Strengthening economic resilience for quality growth; and National Priority 7: Strengthening the stability of Polhuhankam (Political, Legal, and Security) and public service transportation.

Cirebon includes disaster and climate resilience as priority sectors in Cirebon Mission part three with the main target of improving the quality of the environment and controlling the impacts of climate change. The strategy is carried out by a) improving the conservation of natural resources and biodiversity and their ecosystems by forming several policies aimed at improving the quality and supply of water, as well as air quality, increasing vegetation cover and improving the quality of spatial planning; b) increasing efforts to mitigate and adapt to climate change by forming several policies aimed at increasing efforts to reduce greenhouse gas emissions and adaptation to the impacts of climate change, provision of public facilities and infrastructure, Improving the quality of housing and settlement environments, provision of livable houses, rehabilitation of houses that are not livable, and reduction of urban slum areas.

In the 2020 Regional Planning and Regulation Documents concerning the Cirebon Disaster Management Plan will also be prepared, so that these regional regulations can be used as a reference in other regulations and policies in the implementation of disaster management. Provision of disaster evacuation space includes space city scale disaster evacuation, flood disaster evacuation room, tidal wave and space disaster evacuation rooms fire disaster evacuation, with details as follows:

1. The city scale disaster evacuation room is located at the stadium Bima Sunyaragi subdistrict and Kebon Pelok Field, Kalijaga subdistrict.
2. The flood disaster evacuation room is at the Bima Stadium Sunyaragi subdistrict, Kesambi District.
3. The tidal wave disaster evacuation room is located at The Public Prosecutor's Office in Kebonbaru subdistrict, Panjunan subdistrict, Lemahwungkuk subdistrict, and Parking lot.
4. The fire disaster evacuation rooms are located at Pekalipan subdistrict, Jagasatru subdistrict, Panjunan subdistrict, Kesepuhan subdistrict, and Kelapi subdistrict, directed at the Government Office by utilizing public buildings as disaster evacuation posts as well as utilizing open space in the form of a sports field.

2.3 Disaster Prone Areas

Based on the Cirebon RTRW, a disaster-prone area is an area that has a tendency to occur prone to tidal waves, inundation, and fire-prone.

a) Flood Puddle

Flood prone areas are in the Pemuda Street Area and Terusan Pemuda Street, Sukasari subdistrict, Dr. Cipto Mangunkusumo Street, Gunungsari Region-Ampera Street, Perumnas Burung, Perumnas Gunung Area, Kali Tanjung Region and Majasem Region.

Figure 9 - Flood Hazard Map

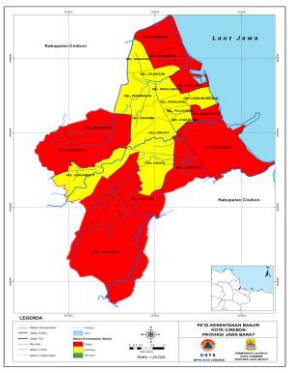
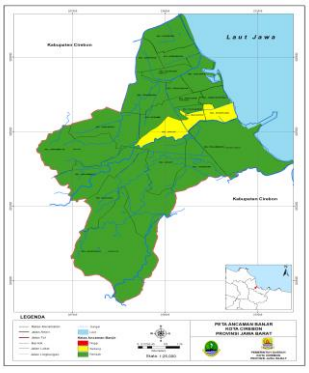


Figure 10 - Flood Vulnerability Map



b) Tidal Wave and Fire Prone Areas

Tidal-prone areas are located in Kesenden, Lemahwungkuk, and Panjunan subdistricts (Figure 11). Fire-prone areas include residential areas with high density, such as in Pekalipan, Jagasatru, Panjunan, Kasepuhan, and Kecapi subdistricts, as shown in fire hazard maps and fire vulnerability maps (Figure 12).

Figure 11 - Rob Flood Hazard Map

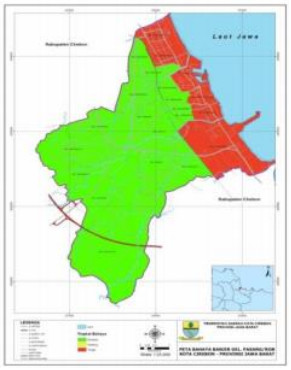
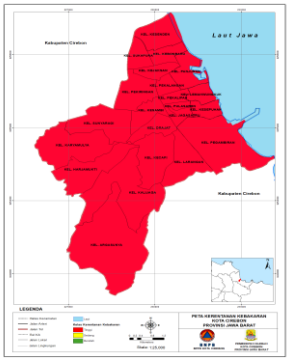


Figure 12 - Fire Vulnerability Map



2.4 Government Structure and Decision-Making Process

According to Law Number 32 of 2004 concerning Regional Government, that in carrying out regional autonomy has rights, namely:

a) To manage their own government affairs

b) To choose regional leaders

c) To manage regional apparatuses

d) To manage regional wealth

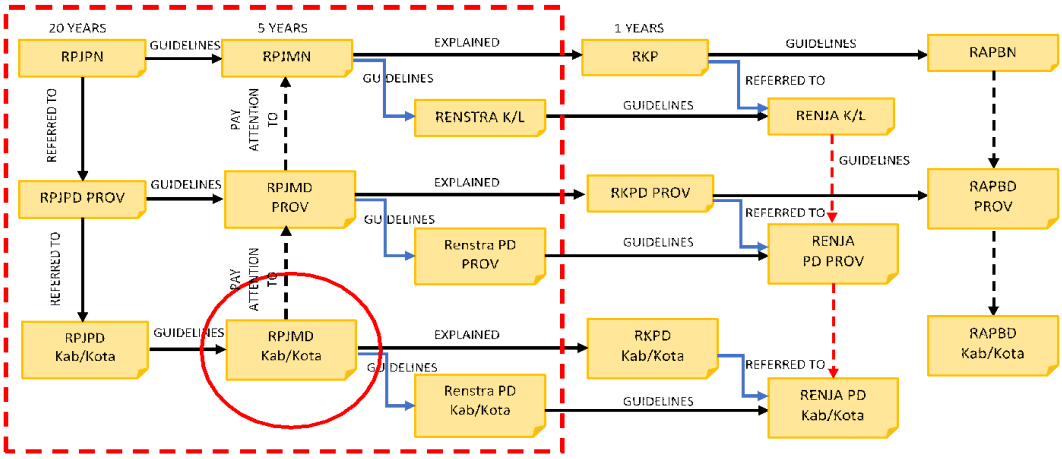
e) To collect local taxes and levies

f) To obtain revenue sharing from the management of natural resources and other resources in the area

g) To get other legitimate sources of income

h) To get other rights that are regulated in laws and regulations.

Figure 13 - Development Plan's Linkage between Central Government, Sub-National, and City Government



Source: Authors

a) In making development plans, the city government is guided by relevant development planning documents, including: (1) Agenda for SDGs; (2) RPJMD and RTRW surrounding districts; and (3) Strategic Environmental Assessment (KLHS) RPJMD Cirebon 2018-2023 and adapted to Cirebon RPJPD 2005-2025, Cirebon Spatial Plan 2011-2031, RPJMN 2020-2024, RPJPD West Java Province 2005 - 2025, and the West Java Province RPJMD 2018-2023.

b) Furthermore, the initial draft RPJMD Cirebon 2018-2023 was refined based on the results of facilitation with the Governor of West Java. Subsequently, based on the results of these improvements, the RPJMD Development Planning Conference (Musrenbang RPJMD) was held to obtain suggestions and input from stakeholders.

2.5 Stakeholders Involvement in Policymaking

The strategy and direction of development policies constitute a comprehensive planning formulation based on annual policy directions in achieving the goals and objectives of urban development. Planning carried out effectively and efficiently as a strategic development pattern will provide added value to the achievement of regional development in terms of quantity and quality. In achieving the development goals of a region, the determination and formation of policy directions needs to involve the role of the community and experts in its formulation.

In Cirebon, it is mainly involving city's government bodies such as Regional Development Planning, Research and Development Agency (BPPPPD) and city-level agencies such as: Environmental Agency; Trade and Small Medium Enterprises Agency; Health Agency; Youth, Sports, Culture and Tourism Agency; Public Works and Spatial Planning Agency; and Food, Agriculture, Marine and Fisheries Agency; city-level disaster management agency. NGOs are generally involved only in discussion. The absence of the role of academics in the formation of policies in the city of Cirebon can be said to be lacking in perfecting effective and efficient policies in accordance with the goals and needs of the city.

CHAPTER 3
Key Problems, Challenges and Opportunities in Priority Sectors

3.1 Disaster Risk Reduction

Chapter 2 discussed policies and strategies for climate resilient and inclusive city as a foundation to deep dive the priority sectors in this chapter. Disaster risk reduction strategies and policies define goals and objectives across different timescales and with concrete targets, indicators and time frames. A global, agreed policy of disaster risk reduction is set out in the United Nations endorsed Sendai Framework for Disaster Risk Reduction 2015-2030 aimed at preventing the creation of disaster risk, the reduction of existing risk and the strengthening of economic, social, health and environmental resilience.

On the city scale level, Cirebon faces the absence of integrated sustainable planning, but in terms to enhance the city's preparedness towards potential disasters, the city government provides prevention and handling efforts that are divided into:

1. Pre-disaster events:

Aiming at increasing local awareness towards climate change and the importance of disaster risk prevention through community empowerment as described in Section 1.11 by creating climate subdistrict and waste bank management.

2. During disaster events:

Providing disaster evacuations for city-scale disasters to some directed point, such as Stadium Bima Sunyaragi, the Government's Office and Public Prosecutor's Office in Panjunan subdistrict, Lemahwungkuk subdistrict, and Parking lot as described in Section 2.1.

3. Post disaster events:

Though the prevention and preparedness towards potential disaster is still lacking, the city government provides an Emergency Call Single Number Service (NTPD) 112 as described in Section 1.11 to handle various emergencies, such as fires, riots, accidents, natural disasters, handling of health problems, disturbances to security and public order and various other emergencies. To get a hold on quick response specifically to health emergency services, the government provides Public Safety Center (PSC) 119.

There are also challenges that Cirebon's government is facing, like lack of facility, infrastructure, and people's response to disaster. The communities in Cirebon typically tend to be passive and assume that disaster prevention is only the sole responsibility of the civic officers. In addition, empathy to natural disaster prevention, mitigation and relief as well as the speed of response from the community and officials from organizations alike are among the aspects that need urgent improvement to prevent and mitigate massive economic loss and fatality.

It is necessary for the government to provide disaster related information such as disaster warning, emergency

management, and how to prevent or lessen the impact of disasters. This information can be delivered through media such as newspapers, television, radio, direct meetings between communities and the government, or even included in the national basic curriculum to reduce the risk of disasters. Effort to disseminate information regarding disaster and climate change is absolutely needed, especially for groups that are vulnerable to climate risk (women, elderly, children, and coastal community).

3.2 Climate Change Adaptation and Mitigation

Indonesia has developed a National Action Plan-Greenhouse Gases (RAN-GRK) and Regional Action Plans-Greenhouse Gases (RAD-GRK) since 2007 as a form of action to reduce greenhouse gas emissions for national and province level in accordance with IPCC recommendations. RAN-GRK and RAD-GRK were developed based on a decentralized approach and have not yet met the multilevel governance approach, as recommended by the UNFCCC and climate change governance in a number of regions in Europe.

According to Sibarani (2017), there are several challenges faced in the development of climate change mitigation and adaptation programs, namely: (1) The decentralized system does not support funding that is not in accordance with central government policies. Climate change activities in regions require special funding and are different from other regions; (2) Decentralization has created a more complex situation where coordination between many centers of power and authority has become more difficult; (3) the characteristics of the distribution of responsibilities are not followed by an increase in the capacity of the local community technically and the distribution of greater authority at the local level is also not accompanied by the development of appropriate technical skills at the local level to carry out the required tasks such as accurate recording of greenhouse gas emissions.

At the city level, challenges are also encountered in the form of a lack of information and knowledge about climate change itself, which has an impact on the low awareness of society's community behavior. The absence of integrated sustainable planning on all aspects in terms of climate adaptation and mitigation, water sanitation and the environment, makes it difficult to draw up investment plans that will be undertaken in building the city's resilience to climate change. In addition, climate change rapidly produces weather anomalies and increases disaster risk that is not aligned with disaster preparedness.

3.2.1 Local Action Plan (LAP)

To implement the mitigation and adaptation on climate change, the city of Cirebon has been developing Local Action Plan (LAP) together with stakeholders as follows:

- Climate based local government policy.
- Sustainable energy development.
- Citizens partnership and collaboration with government and other institution.
- Reducing Greenhouse Gas Emissions.
- Development of green space for microclimate.
- Waste and wastewater management.

- Meeting the needs of clean water and sanitation.
- Empowerment of community habits.
- Improvement of facilities and infrastructure as well as cleanliness and beauty of the city to support the tourism sector.
- Establishment of a good coordination system with each regional apparatus as a disaster mitigation and adaptation effort which is the initial step of the city's local action plan.

3.3 Energy and Transport, Water and Sanitation

The main investment facilities planned are aimed at improving the accessibility and convenience of public transportation, both health services especially advanced health.

3.3.1 Energy

The city utilities available are very diverse and in general have been available with a range of services that can almost entirely serve the city of Cirebon. In meeting the needs of cities and residents in the energy sector, Cirebon solely relies on providing alternative gas and electricity networks that cover the entire city area. As written in Cirebon Local Medium-Term Development Plan of 2018-2023, natural gas users in 2015 were registered at 15,957 customers, an increase from 2014 which reached 14,373 customers and the level of electricity service coverage has reached rates above 80% of the household.

In 2019, PT PLN Cirebon Region recorded electricity sales in Cirebon Municipality at 33,823.9MWh divided by six tariff classifications (social, household, business, industry, government building, and public road). From the total sales, 41 % was distributed to 5,537 business group customers. The second largest (34%) was distributed to 55,400 household group customers. Energy development can be designed to be included in the priority sector of Cirebon.

3.3.2 Transportation

Cirebon has train stations, terminal, port, and airport as well as access to the toll road that connects to areas outside of Cirebon. Local regulation no. 9 of 2009 on Transport Operation has ruled on transporting passengers, fostering vehicle drivers, rights and obligations of transportation users, determining parking rates, and testing motorized vehicles. These rules are not enough without enforcement. Besides, there are several public transportation problems:

1. Public transportation in Cirebon sparsely using the bus stop to pick up the passengers. Haphazardly stopping causes congestion.
2. Ten Bus Rapid Transits from the Ministry of Transportation and bus stops have not yet been operated since 2018.
3. The absence of a connected and an integrated public transportation network between one to another mode (no transit-oriented development program). As the result, people prefer to ride private vehicles.
4. Lack of eco-friendly transportation.
5. Management of transportation and traffic systems.

3.3.3 Water and Sanitation

Cirebon's sanitation program aims at optimizing the utilization of the Kesenden and Ade Irma WWTPs with the market share of commercial and community areas, as well as achieving ODF (Open Defecation Free) by building communal sanitation and family latrines. Concerning water, the goal is to increase PDAM water service hours and service capacity. These two things are done by increasing the reservoir capacity in Plangon. Pipeline repairs are also carried out in order to minimize the level of leakage.

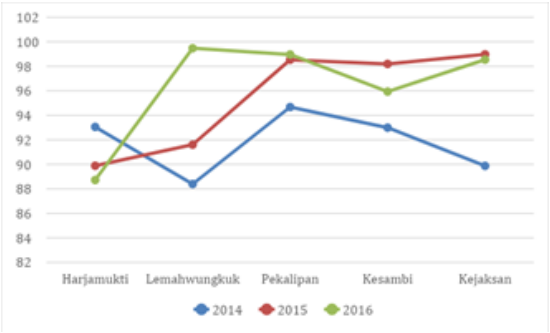
Clean Water

Most urban communities have used PDAM services to meet the needs of drinking water sources, and there are still some who use dug wells, pump wells, and springs. Some of the water sources are protected, and some are unprotected. PDAM water sources, dug wells, pump wells are relatively more protected and meet health requirements. To fulfill the needs of Cirebon's clean water through piping, PDAM is still relying on clean water sourced from springs in Kuningan District. While for non-piped clean water is carried out by utilizing ground water. This situation undoubtedly makes the reliance on piped clean water specifications that are likely to face an elevated price at any time if the provider of clean water, in this case the government of the Kuningan regency, increases the sale price of clean water.

For the use of PDAM water, it was recorded that in 2019 it would distribute as much as 18 million m^3 of water. The most volume (68%) is distributed to 50 thousand household customers. 17% of water is distributed to six thousand commercial and industrial customers. The rest is distributed to special customers, government, and social agencies (BPS 2020).

The following figure shows changes in the increase in public access to drinking water quality from 2014 to 2016. Although the change does not appear to significantly increase in each region and in fact some regions tend to decrease, the increase in access to drinking water from 2014 to 2016 has experienced decent changes. Most of the improved access to drinking water comes from piped drinking water distributed by the Cirebon Municipal Water Supply Company (PDAM). The highest percentage of sustainable drinking water in 2016 was in Lemahwungkuk District, which reached 99.47% and the lowest in Harjamukti District was 88.7%.

Figure 14 - Sustainable Access to Quality Drinking Water



Source: Dinas Kesehatan Kota Cirebon

Some of the problems of the city related to clean water can be found as follows:

a) Cirebon does not have a raw water source, the source of raw water used by the PDAM is located outside of Cirebon area (Kuningan District), so it is often disrupted by continuity, quantity of service, given the continued development of the area of settlements that must be served by the PDAM.

b) The use of groundwater as a source of clean water in the city cannot meet the needs of the community.

c) Limited clean water source has caused a drought in Argasunya subdistrict in the dry season of 2019.

d) There are still almost 3.84% households that have not been able to access clean water, despite a decline from 2016 (5.29%).

To meet the increasing demand for drinking water in the community, especially Cirebon and its surroundings, the West Java Provincial Government has initiated the construction of the Greater Cirebon Regional Drinking Water Supply Channel (SPAM Regional Jatigede), which takes raw water from the Jatigede Reservoir. Cirebon government has signed the MoU and will get access with a debit of 500 liters/second.

River Water Quality and Wastewater

Healthy latrine (jamban sehat) is an important factor in controlling cases and death due to diarrhea. Healthy latrine facilities are equipped with goosenecks, septic tanks (wastewater management system/SPAL), whether used individually or communal, with infiltration away from water sources around more than ten meters.

Cirebon has several Communal Wastewater Treatment Plants (WWTPs) or Instalasi Pembuangan Air Limbah (IPAL), namely, Gelatik, Kesenden, Rinjani, and Ade Irma. The four WWTPs provide city scale services and are managed by PDAM Cirebon. The level of WWTP services to households (communities) in general reaches 40-50%. The existing network system has not been able to reach all settlement centers. In addition to the communal WWTP, the city government in collaboration with the central government through the SANIMAS program seeks to develop a community-based sanitation system in the form of MCK++ development and local scale communal septic tanks. Whereas sanitation in individual residential and residential environments mostly has a fairly good residential

sanitation system. Based on the data from monitoring and coaching by the Cirebon Health Agency, sanitation households in Cirebon reached more than 80% of the total number of households that were fostered. Other problems on wastewater management that can be identified are:

e) Limited service capacity and network of wastewater that connects to the closest WWTPs.

f) Small area coverage among low income groups.

g) Lack of wastewater network infrastructure.

h) Open defecation among community behavior.

i) Some people in Cirebon are easily disposing of their waste into the drain/river or because of economic limitations have not been able to provide sanitation facilities themselves.

j) The condition of residential areas in the densely populated Cirebon is difficult to place sewage and septic tanks in accordance with health requirements.

k) Four WWTPs owned by Cirebon have not been able to function optimally, and the capacity of each existing WWTP needs to be increased.

3.4 Solid Waste Management

The development of the area is inseparable from the increase in population with the flow of urbanization in hilly areas, which causes a higher volume of waste that must be managed every day. Waste production comes from industry, trade, household, and so on. In Regional Regulation concerning Cirebon RTRW (Urban Planning) 2011-2023, TPA Kopi Luhur is designated as landfill with a sanitary landfill system. The risk index value of Kopi Luhur Waste Landfill is 575.3536, classified as a moderate hazard and the suggested action is to continue the landfill and apply the rehabilitation into a controlled landfill system gradually (Widiarti, 2019). Accumulation of the amount of waste also happens in temporary landfill (TPS). To solve this, the converts temporary dumpsite locations to parks and services transformed into TPS mobile.

There are several reasons why waste management in Cirebon has not run optimally, among others, such as 1) management techniques that do not innovate; 2) management of the landfill that is not in accordance with the rules that are environmentally friendly; 3) no additional land for landfills; 4) poor coordination channels; and 5) insufficient number and bad condition of the dump truck to transport the waste to the landfill.

In practice, most of the solid waste is discarded in a landfill, and a small part of it is made into handicrafts and sold to the collector. The government tries to reduce the amount of waste that is thrown into the TPA with the activity of waste banks. At the city level, there are 66 administrative waste banks registered. However, only about 30 waste banks are still active. In a waste bank, waste is separated between organic and plastic manually. Organic waste is made into compost which can be sold as fertilizer, while plastic waste is sold back to collectors. The government provides guidance to waste banks that are still active and the socialization to re-activate the program. Some of the activities that have been carried out

that are part of these efforts are: procurement of composter baskets, takakura baskets, collaboration with third parties/private parties (as much as 40 MoUs). Furthermore, the local government of Cirebon has just received assistance in the form of a Waste Recycling Center (Pusat Daur Ulang Sampah) from the Ministry of Environment and Forestry in July 2020. This assistance is expected to help manage up to 10 tons/day of waste, but the operation has not been able to run optimally.

3.5 Sustainable Use of Resources

The natural resource conservation program launched is the discretion of the Cirebon government to protect development resources. The sources of development are land, water, air and forest. According to the Department of Environment (DLH), multiple steps have to be taken to ensure the safety and conservation of natural resources. An emission test is conducted twice a year by government programs and will start collecting consistency data from water, air, and soil. This emission test is established to determine the condition of natural resources while monitoring so that the quality is maintained. Regulations concerning environmental protection and management are regulated in regional regulation number 5 of 2015.

One way to manage the sustainability of natural resources is to implement circular economy processes. One of the reasons for preserving nature conservation is that the manufacturing business requires raw materials and natural resources as inputs. After these resources are limited, they will negatively impact sustainable business development (Tien, 2020). So far, Cirebon has started to implement a circular economy through a garbage bank program that uses waste to be resold or turned into compost.

3.6 Informal Settlements

Based on the Decree of the Mayor of Cirebon Number 663/Kep.133-DPRKP/2018 concerning the Second Amendment to the Decree of the Mayor of Cirebon Number 663/Kep.70-BAPPEDA/2015 concerning the Determination of the Location of Slum Housing and Slum Settlements in Cirebon, the city slum settlements are estimated to cover an area of 343.4ha which has decreased by 27.47ha, so that the area of the slum settlements in Cirebon is 315.91ha.

Figure 15 - Cirebon City Slum Management Area Map

Source: KOTAKU

The priority of slum handling activities at this time is in the Panjunan Coastal Area, as stated in the Slum Decree above that the Panjunan coastal area is the first priority in handling slums in Cirebon. Handling slum areas of the Panjuanan Coastal area are done by, among others, constructing Rusunawa (flats), arranging environmental facilities and infrastructure and providing green open spaces. In the Strategic Plan of the Public Housing and Settlement Areas for 2018-2023, there are several activities to deal with settlement problems, especially slum areas, including:

a) Repairing uninhabitable houses to prevent the growth and development of slum settlements.

b) Increasing cooperation and to improve homes that are not habitable.

c) House rehabilitation for disaster victims.

d) The construction of houses for disaster victims.

e) The control and synchronization of restoration/renovation of slum areas.

In addition, Cirebon also has a Regional Regulation that regulates the handling of slum settlements, namely, Regional Regulation Number 9 of 2017 concerning Prevention and Quality Improvement of Slum Housing and Slum Settlements. Among other things, the scope of the regional regulation is related to the duties of the City Regional Government; criteria and typology of Slum Housing and Slum Settlements; prevention of the growth and development of slum housing and new slum settlements; Improving the quality of Slum Housing and Slum Settlements; land provision; funding and financing systems; partnership patterns, community roles, and local wisdom; and sanctions. Prevention of the growth and development of slum housing and new slum settlements is carried out through:

a) Supervision and control (permits, conformity with spatial planning and integration of public utility plans with applicable regulations); and

b) Community empowerment (assistance and information services).

Cirebon is also working with KOTAKU (Kota Tanpa Kumuh or City without Slums) to prepare several other planning documents related to the management of slums, including those

contained in the Urban Slum Settlement Prevention and Quality Improvement Plan (RP2KPKP) and the Action Plan for the Urban Slum Management Program.

3.7 The Cirebon City Smart City Master Plan (SCMPC)

Through environmental issues in Cirebon as a regional government, there is a gap between the management of resources and community responsibility in maintaining resources. In response to the city's environmental management limited impact, the government decided that the idea of a smart city would be adapted by city management. Therefore, referring to the Decree of the Minister of Communication and Information Number 265/2017 concerning Submission of the Movement to the 100 Smart City Assessment Selection, Cirebon officially participated in one of the 25 cities participating in the program (Siddiq, 2017). Efforts and steps to implement the dimensions in Smart City from the concept of the Cirebon City Smart City Master Plan (SCMPC) such as:

1. Smart Governance, the realization of effective, efficient and communicative governance and regional governance.
2. Smart Mobility (Branding) objectives, increasing regional competitiveness in the local, national and international scope.
3. Smart Economy goals, the creation of an ecosystem that supports people's economic activities.
4. Smart Living, the realization of a decent, comfortable and efficient living environment.
5. Smart People (Society), the realization of a humanist and dynamic social-technical community ecosystem.

CHAPTER 4
Policy Direction, Recommendations and Enabling Strategies

4.1 Current and/or Expected Policies Related to Priority Sectors

Chapter 3 and this chapter have a solid connection to provide further direction. The following regional development priorities are announced: First, the development priorities carried out by the Cirebon government are starting from improving the welfare and quality of Human Resources, which is carried out through efforts to repair and develop facilities in the education and health sectors, as well as to improve the quality and welfare of educators and medical personnel. Furthermore, accelerating growth and even distribution of sustainable development efforts are the next priority, which is accomplished by the expansion of transport and irrigation facilities, the structuring of slum and residential areas, the acceleration of the use of modern technology and recycling of waste and waste disposal systems.

The next development priority is to increase the productivity of regional competitiveness, carried out through: Increasing local MSMEs and competitiveness in the creative economy, and increasing and empowering the participation of women in the creative industry. The next development priority is bureaucratic restructuring and improving the quality of public services. The effort is accomplished through the enhancement of the service system by offering a centralized command centre and smart city scheme. The last priority is to increase the conduciveness of peace and public order by increasing the enforcement of Regional Regulations and Regional Head Regulations and reducing the prone points for disturbances of the peace and public order.

The implementation of the regional development priorities scheduled above is a strategic program that must be prioritized in its implementation. In addition to superior programs, development priorities are also directed to carry out campaign pledges for the elected Mayor and Deputy Mayor of Cirebon for the 2018-2023 period and the application of Minimum Service Standards (SPM) which are the authority of the city.

Regarding the SDGs, the local government is committed to implementing the concept of sustainable development by formulating strategies that focus on improving the quality of human resources, increasing welfare, gender equality, clean water and sanitation, reducing inequality, and increasing partnerships. In implementing development, the Cirebon government has adopted a strategy through four development paths, namely: pro-growth, pro-job, pro-poor, and pro-environment.

4.2 Enabling Strategies Related Challenges and Opportunities in Priority Sectors

The challenges faced by the government are related to the quality of human resources sector and regional competitiveness, social problems that are still high and chaotic, urban infrastructure services are not optimal, Cirebon's economic growth is slowing down, Culture-Based Tourism and History Development is not optimal, the performance of regional governance and public services have not been optimal and the number of violators of regional regulations has increased.

Therefore, here are some brief strategies planned and implemented by the Cirebon government: revitalizing and structuring the Kota Lama Area, utilization of the ex-C excavation area as a tourist location, arrangement of sidewalks, construction of main roads and shops, arrangement of Bima area, arrangement of the skywalk in Sukalila area, arrangement of Kesenden Beach, arrangement of the palace and cultural heritage buildings, arrangement of Kampung Benda into religious tourism locations, and development of halal tourism.

To improve environmental quality, control the impact of climate change, and increase prevention and internal preparedness for disasters, the steps taken are:

- Increasing the conservation of natural resources and biodiversity and their ecosystems,
- Improving the quality of water supply and water quality,
- Increasing vegetation cover, increasing quality of spatial planning,
- Increasing efforts to reduce and adapt to climate change,
- Reducing greenhouse gas emissions and adapting to the impacts of climate change,
- Providing public facilities and infrastructure, improving the environmental quality of housing and urban settlements,
- Enhancing disaster mitigation and adaptation, preparing Risk Reduction Documents Disaster (PRB).

4.3 Instruments/tools Used to Implement such Policies

4.3.1 Planning

The government is trying to harmonize development in the city of Cirebon with the international agenda, namely SDGs. The city government is guided by relevant development planning documents, including: (1) SDGs Agenda; (2) RPJMD and RTRW surrounding districts; and (3) Strategic Environmental Assessment (KLHS) RPJMD Cirebon City 2018-2023. In addition, there are also legal acts that regulate environmental governance of human and natural interactions around the city of Cirebon that focus on local environment, namely:

- Environmental Protection and Management (Regional Regulation Number 05/2015),
- Licensing and Supervision of Management of Hazardous and Toxic Waste (Regional Regulation Number 13/2015),

- Traffic Management and Engineering (Regional Regulation Number 7/2017),
- Services for Regional Public Companies for Drinking Water at Tirta Giri Nata (Regional Regulation of the City of Cirebon Number 17/2017),
- Waste Management (Regional Regulation Number 4/2019),
- Implementation of Traffic Impact Analysis (Regional Regulation Number 8/2019),
- Licensing for Disposal of Wastewater to Water or Water Sources (Cirebon Mayor Regulation Number 39/2012),
- Licensing of places for storing and temporary collection of B3 waste (Cirebon Mayor Regulation Number 46/2017),
- Groundwater Conservation through Infiltration Wells and Biopore Infiltration Holes (Cirebon Mayor Regulation Number 38/2019).

4.3.2 Punish and Reward

At the national level, one of the Ministry of Environment and Forestry's innovation programs is the Company Performance Rating Assessment Program in Environmental Management (PROPER). PROPER is a very strategic instrument to encourage company compliance in meeting various laws and regulations related to the environment, such as Law Number 32 Year 2009 concerning Environmental Protection and Management. The PROPER is selective, especially for industries that have an important impact on the environment and care about image or reputation. PROPER utilizes the community and the market to put pressure on the industry to improve environmental management performance. Community and market empowerment are done by the distribution of credible information, so as to create an image or reputation. The assessment requirements are the implementation of environmental management systems, energy efficiency, water conservation, emission reduction, biodiversity protection, 3R principle, B3 waste and non-B3 solid waste, and community empowerment.

4.3.3 Incentives

One of the government's efforts to increase community participation in environmental management is to provide environmental awards at national, provincial and city scales. One of the efforts of the local government in increasing environmental awareness by students at Elementary Schools to Higher Education is manifested in Adiwiyata activities. It is expected that students will be able to maintain environmental quality from an early age, by applying the 3R principle (Reduce, Reuse, Recycle). At the end of the activity, there was an award to students and educational institutions that were able to preserve the environment.

1. Adiwiyata for schools at the provincial level
2. Monitoring and coaching at the school level
3. Healthy Village Contest
4. Clean Toilet Competition

There are also the Adipura Program (intended for cities or districts in Indonesia that succeed in cleaning and managing the urban environment), Kalpataru (given to individuals or groups of people who have contributed to preserving the environment), and Adiwiyata (aimed at schools that are applying the pattern of green school culture).

In addition, the central government through the Ministry of Environment and Forestry plans to provide an incentive of 9 to 11 million rupiah ($610-$750) for local governments that have succeeded in reducing plastic waste from households. In support of Presidential Regulation number 83 of 2018 regarding sea management, the Cirebon government also plans to make a regional regulation on Limiting the Use of Plastic Bags.

In the future, instruments or tools that can be used to close the policy gaps and implement expected policies include:

- Strengthening local regulations related to building permits (IMB) and Indonesia's Certificate of Occupancy (SLF) for factory permits related to the effects of carbon dioxide gas.
- Management of transportation systems.
- Traffic management.
- Inorganic waste reduction.
- Enhance community development on waste management at subdistrict level and community based thematic mapping on the economic opportunity.
- Tools and systems for inventory and monitoring & evaluation.
- Investments and action priorities.
- Increasing the quality of raw water and clean water discharge.
- Integrated drainage network system.
- Normalization and re-design the drainage channel due to land use changing and intensity of rainfall and domestic waste.

4.4 Challenges and Opportunities for Mainstreaming Sustainable Development

4.4.1 Policy Instruments: Regulatory, Procurement, Information, Measuring, Monitoring

Procurement, as stated in the regional expenditure policy, is carried out by establishing an accountable, proportional, efficient and effective spending pattern. Expenditures in the next five years will be allocated as follows:

- Priority I: allocated to fund mandatory, and binding direct, expenditures that fulfill the vision and mission of Regional Heads and Deputy Regional Heads, as well as the implementation of the SDGs fulfillment of basic service implementation. The allocation for the fulfillment of basic services is taken into account in Priority II with the consideration also being included in the priorities of the Mayor and Deputy Mayor.
- Priority II: implementation of six development priorities for 2018-2023, Fulfillment of development targets in order to realize the vision and mission of the Mayor and Deputy Mayor of Cirebon for 2018-2023, Implementation of Minimum Service Standards (SPM) is the authority of the city government, Implementation of SDGs, Fulfillment of the education function budget of at least 20% of regional expenditure, Fulfillment of the health function budget of at least 10% of total APBD expenditure,

Fulfillment of the infrastructure function budget allocated to finance the construction/maintenance of roads and bridges, as well as improvements to public transportation modes and facilities.

- Priority III: allocated to finance the implementation of other government affairs. The budget allocation for Priority III is intended to fund regional apparatus programs that are not included in the priority I and priority II categories. These programs are carried out to carry out government affairs which fall under the authority of the city government but are not the priority of the Mayor and Deputy Mayor of Cirebon in 2018-2023 and are a supporting program for office administration.

4.4.2 Tools, Early Warnings, GIS

In general, Cirebon has limited specific tools as an effort to provide early warning systems for disasters, which has been done by the local authority by designing disaster response programs. At present, Cirebon government uses emergency call single number service system 112 to deal with emergencies such as fire, unrest, accident, natural disasters, handling health problems, disturbance of security and public order, and/or other emergencies determined by the government and/or local government. Until now the Regional Regulation related to disaster is Regulation No. 74 of 2012 concerning General Guidelines for Disaster Management and Refugee Management in Cirebon, but this guard has not covered all aspects that need to be regulated in disaster preparedness efforts.

4.4.3 Technologies used (waste, energy)

In order to meet the requirements of policies, all sectors must strive to reduce greenhouse gas production. The implementation has been carried by several agencies:

- Cirebon's local authority has created bicycle lanes at several points to increase the use of bicycles. Furthermore, there are improvements in facilities such as sanitation facilities, area of green open space, and percentage of drainage in good condition. In addition, there are public road lightings with solar energy installed that stretches along the city road for about 28km in 2019 consisting of 50 units in Cirebon city and 525 units in Cirebon regency.
- Cirebon Electric Power in Cirebon District uses total suspended solid (TSS) to reduce water pollutant load. TSS all volatile treatment (AVT) becomes an oxygen treatment (OT) on WTP, which is able to reduce the amount of B3 waste produced and increase water conservation. Cirebon Power also uses a vibrating screen instead of a crusher to modify the filter size on the vibrating screen so that it can save a lot of energy. Besides the use of environmentally friendly coal also produces greenhouse gases always below 1.00 kg CO2eq/kwh which is determined as the optimal value in the electricity generation industry and makes Cirebon Power a pioneer of clean coal energy in Indonesia.
- The implementation of energy-saving behavior in a couple of shopping centers by using sunlight as a source of mall lighting during the day in CSB

Mall and low-power electronic devices to conserve electricity usage in Grage Mall as well as replaces the use of soap into foam so that it saves more water.

- With women group, Cirebon city government and NGOs work together to create urban farming initiatives and improve the sorting of household waste from organic, inorganic and hazardous waste and provide education to change the behavior of the people of Cirebon in handling the waste

4.5 Financing Instruments

At city level, local government institutions can receive technical support regarding climate change vulnerability and adaptation from national government (APBN) and regional government (APBD). Support can be in the shape of training for capacity building or budget allocation to implement the adaptation actions. Cirebon has received assistance from the Rockefeller Foundation in cooperation with Mercy Corps Indonesia to strengthen resilience through the ACCCRN initiative. It is possible and acceptable to receive funding from donors as the national government budget is very limited.

There is a working group on climate change in Cirebon, whose members are various stakeholders, including local government institutions, universities, and non-government organisations. The working group was established under the ACCCRN Programme as a replication city in Indonesia; all members have a high commitment in addressing climate change impacts and strong coordination in every activity. This indicates that Cirebon is implementing the preparation of climate change vulnerability assessment and the city resilience strategy.

4.6 Partnership and/or Cooperation

In 2018, various collaborations were carried out, both inter-regional cooperation and cooperation with third parties as follows:

1. Cooperation Agreement between the Directorate of Drinking Water Supply System Development of the Directorate General of Human Settlements of the Ministry of Public Works and Public Housing with the Cirebon Regional Government regarding the Development of Drinking Water Supply Systems for the Cirebon Fostered PDAMs. Number: 690 / Perj.1- DPUPR / 2018 dated January 4, 2018.
2. Memorandum of Understanding between the Directorate General of Oil and Gas of the Ministry of Energy and Mineral Resources and the Regional Government of Cirebon city of West Java Province concerning the Provision and Distribution of Natural Gas through the Natural Gas Distribution Network for Households in the Cirebon Region of West Java Province, Number: 540 /NK.7-Adm.Per/20/2018.
3. Joint Agreement between the Regional Government of Cirebon and the Cirebon Prosecutor's Office on Handling Civil and Administrative Law Issues, Number: 119 / KB.7-Huk.Ham / 2018 and B-446 / O.2.11 / 63/03 / 2018 dated March 6, 2018.
4. Joint Agreement between the Regional Government of Cirebon and

PT. Bentani Permai Hotel on Increasing Employment Opportunities and Labor Competencies in the city of Cirebon. Number: 560 / KB.12-DISNAKER / 2018 and 001 / PGA / BHR / VII / 2018 May 11, 2018.

5. Joint Agreement between the Regional Government of Cirebon and PT. Arteri Daya Mulia regarding Increased Employment Opportunities and Labor Competencies in the city of Cirebon. Number: 560 / KB.13-DISNAKER / 2018 and 001 / ARD-VII / 2018 May 11, 2018.
6. Joint Agreement between the Regional Government of Cirebon and PT. Mulia Putri Lestari (Aston Hotel) regarding Increased Employment Opportunities and Labor Competencies in the city of Cirebon. Number: 560 / KB.14-DISNAKER / 2018 May 11, 2018.
7. Joint Agreement between the Regional Government of Cirebon and PT. House of Rattan concerning Increased Employment Opportunities and Labor Competencies in the city of Cirebon, Number: 560 / KB.15-DISNAKER / 2018 May 11, 2018.
8. Joint Agreement between the Regional Government of Cirebon and PT. Sumber Kasih about Increased Employment Opportunities and Labor Competencies in the city of Cirebon, Number: 560 / KB.16- DISNAKER / 2018 Date 11 May 2018.
9. Joint Agreement between the Regional Government of Cirebon and PT. Tiaramas Rona Gemilang about Increased Employment Opportunities and Labor Competencies in the city of Cirebon, Number: 560 / KB.17-DISNAKER / 2018 dated May 11, 2018.
10. Joint Agreement between the Regional Government of Cirebon and PT. Ifan Margatama on Increasing Employment Opportunities and Labor Competencies in the city of Cirebon, Number: 560 / KB.18-DISNAKER / 2018 May 11, 2018.
11. Joint Agreement between the Regional Government of West Java Province and the Regional Government of Cirebon on Layout Care Services in Cirebon. Number: 440 / KB.20-DINKES / 2018 Date of November 14, 2018.
12. Joint Agreement between the Regional Government of Cirebon and PT. Perusahaan Gas Negara Tbk concerning the Use of Gas Meter Test Standard Installation for the Implementation of Diaphragm Gas Meters and / or Tera Meters, Number: 542 / KB.22-DPKUKM / 2018 and Number: 044000.PK/HK.02/BUI/2018 Date 06 December 2018.
13. Cooperation Agreement between the Cirebon city government Local Office of Trade, Cooperatives, Small and Medium Enterprises with PT. Perusahaan Gas Negara Tbk regarding the Use of Gas Meter Test Standard Installation for the Implementation of Diaphragm Gas Meters and / or Tera Meters, Number: 542 / PKS.24-DPKUKM / 2018 and Number: 045600.PK/HK.02/BUI/2018 Date 18 December 2018.
14. Joint Agreement between the Regional Governments of West Java Province, District/city governments throughout West Java and the Bogor Institute of Agriculture on Cooperation in the Field of Education, Training, Research, Community Service, and Development of Regional Economic

Potentials Based on Agribusiness and Agro-Industry, Number: 420 / KB.25-BPPPPD / 2018 dated December 20, 2018

15. Joint Agreement between West Java Provincial Government and West Java Regency/city governments concerning JABAR MASAGI. Number: 420 / KB.21- DISDIK / 2018 Date 05 December 2018.

4.7 Capacity Building

The purpose of capacity building is to provide a long-term foundation for transformation. It requires expertise in sustainability, and equipment as well as preparation through trainings, education systems approach, transdisciplinary initiatives, and co-design as the solutions (Stafford-Smith, 2016). Based on the results of interviews and data analysis, conclusions can be drawn that some capacity building activities are needed:

4.7.1 Public

Emergency response training is needed to teach the community how to act when disasters occur. It is expected that through this activity, educated groups will emerge in emergency response activities ranging from injury management, forming emergency response teams, forming Service Centers (Command Posts), logistics distribution, providing temporary shelter, to psychological assistance. Actions could also be developed in the following areas: community counselling on organic waste handling for community composting activities, 3R activities to reduce the amount of waste dumped into the landfill, and hazardous waste (B3) handling.

4.7.2 Government

Provision of training and knowledge enhancement for officers in the technical field such as:

- Climate risk and disaster management plan.
- The refinement of local regulation on drainage systems, water governance, and clean water.
- Disaster preparedness.
- Green building and integrated urban transportation systems.
- Subdistrictlevel for water waste management and 3R.
- Economy empowerment and raising the awareness.
- Capacity building on inventory of GHG emission, climate action plan development, and monitoring & evaluation.
- Project planning and financing, bankable proposal development.

CHAPTER 5
Conclusions and Recommendations

5.1 Conclusions

Cirebon is located in a very strategic position between cities or regions such as Jakarta, West Java and Central Java. The strategic position which is supported by the completeness of urban infrastructure has made the attraction for the growth and development of various kinds of development activities in the city of Cirebon.

Cirebon is at high risk from natural catastrophe and natural hazards such as extreme waves/tides, flooding/inundation, landslide, fires and drought. Cirebon is geographically a lowland area that has a coastal area with a beach length of ±7km and is an area that is downstream of several watersheds so that it has potential for and is prone to inundation or flooding.

In meeting the needs of cities and residents in the energy sector, namely, electricity and gas, the level of service coverage has reached rates above 80% of households. All parts of the city have electricity networks available, and at every appearance of housing and settlement activities, it is certain that electricity provided by PLN can meet the needs. The level of power outages in the city is relatively very low.

The increase in population every year coupled with the rapid flow of urbanization that occurs in the city of Cirebon is not matched by the readiness of the availability of land and infrastructure, especially in the field of water supply and sanitation, as the result slum dwellers are increasing every year, especially in the coastal areas of Cirebon.

The condition of residential areas in the densely populated city makes it difficult to place sewerage and septic tanks in accordance with the health requirements. Garbage, water pollution, air pollution, B3 waste pollution, and land damage are the problems faced by the city of Cirebon, and long-term solutions involvement from all the stakeholders is needed.

There is an absence of a connected and an integrated public transportation network between one mode to another, thus people prefer to ride private vehicles. Public transportation in Cirebon sparsely does not respect the bus stops to pick up the passengers, which often causes congestion.

The challenges in education are mainly because not all residents have been able to receive formal education, especially in the low-income population groups.

The absence of integrated sustainable planning in terms of climate adaptation and mitigation, water sanitation and a suitable environment, makes it difficult to draw up investment plans that will be carried out in building the resilience of Cirebon against climate change.

The good news is that Cirebon moves quickly in the process of adaptation, as evidenced by the establishment of the Cirebon City Smart City Master Plan (SCMPC) document, which was created as a development planning.

5.2 Recommendations

Based on some Cirebon development documents, publications and analysis, the following are some recommendations based on different issues for Cirebon to become a climate-resilient city:

- Early Warning System

Cirebon, with the support from the Provincial Government and from the private sector needs to develop a more integrated an early warning system and to extend the Warning Receiver System (WSR) in the entire city in order to well overcome the risks of catastrophes such as extreme waves or tides, flooding/inundation, landslide, fires and drought. Dissemination/awareness raising on risk disaster management can be supported by existing communities' groups, including NGOs for collaborative action.

- Waste, clean water and sanitation

1. Cirebon with support from private companies could work together to get clean water supply or technology for water supply as PDAM is still relying on clean water sourced from springs in Kuningan District. This condition certainly makes the dependency of piped clean water needs that is likely to experience an increased price at any time if the clean water supplier, in this case the Kuningan regency government, raises the selling price of clean water. It is also important to implement MoU on SPAM (Drinking Water Supply System) with the Ministry of PUPR.
2. Improving the conditions within slums in Cirebon by structuring and providing basic facilities and utilities, as well as rehabilitation. Also replicating the climate village, Community Trash Bank, urban farming and other community movements, including expanding the program KPLH (kampung pangan lestari dan hijau) or sustainable food and green village. It is good to support innovative ideas such as utilization of organic waste and the concept of maggot cultivation (such as the Black Soldier Academy)
3. Increase public awareness of Cirebon together with NGOs to improve the sorting of the household waste into organic, inorganic and hazardous waste and provide education to change the behavior of the people of Cirebon throwing garbage in the river and drainage system.
4. Increase the city government program with the private sector, the NGOs and the universities to access clean water and proper sanitation, as there are still almost 3.84% households in Cirebon which are not able to access clean water, and almost 10.32% of households have not enjoyed proper sanitation.
5. In addition to drought during the dry season, there are also problems regarding many artesian wells that do not operate properly due to lack of maintenance. The community and the private sector must be able to help care for it.

- Public transportation

Seeking potential transport investors to improve quality of Cirebon public transportation as it is one solution to overcome transportation problems, and to provide choices for road users in carrying out their activities in the midst of increasingly dependent people to use private vehicles.

- Education

Together with the universities, the city could provide the program to enhance the School Participation Rate (APS) in Cirebon as for the high school, and tertiary levels is still relatively low. The challenges in education are mainly due to the fact that not all the residents have been able to receive formal education, especially among the low-income population groups.

- Air pollution and green spaces

1. With the help from NGOs and universities, the city could find integrated solutions to overcome the decreasing air quality index in 2019 compared to 2014, as Cirebon also has a bulk coal stock file from Kalimantan, whose dust reduces the quality of the surrounding air (causing respiratory diseases).
2. Increase the green space and water catchment area in collaboration with private companies and get access to Corporate Social Responsibility (CSR) funding.
3. With support from the NGOs and from the private sectors, the city could create a restoration program to enhance recovery of ecosystems that have been degraded, damaged, or destroyed in marine coastal ecosystems
4. In order to increase investment in the city of Cirebon it is recommended to immediately readjust the RTRW (Regional Spatial Plan) and RDTR (Spatial Detail Plan) along with the calculation of the carrying capacity of the land to accelerate development in Cirebon.
5. Green spaces or RTH can be increased by making a roof garden. According to the International Green Roof Association (IGRA), a roof garden has a function as increasing the durability of the roof, reducing noise, reducing pollution, water catchment areas, reducing dust and smoke, natural habitat for animals and plants, and beautifying the city.

- Multi-stakeholder collaboration

1. To make a development program planning by involving all levels of stakeholders and to provide information transparency such as Relawan Iklim, that enables the activation of inclusive collaboration (educational institution, students, government, and society).
2. To develop cooperation between regions in risk of reduction and disaster management.
3. It is important to do mapping in existing communities for collaborative action.

- Capacity building, relevant policy, and research

1. Further research activities such as mapping social risks due to developmental impact.
2. Strategic studies for synergy between authorities: ports, royal palaces (*keraton*), airports, and government.
3. Clear guidance and policy for post-Covid19 pandemic by accelerating the economy, improving public health, and socializing new normality that must be applied.
4. Exchange programmes to send city's staff to selected countries in Europe in order to learn about waste management, sanitation, environmentally friendly transport

system as well as urban forest management.

5. Capacity building should focus on empowerment not just on the transfer of skills.

- Inclusiveness

All stakeholders in Cirebon need to mainstream inclusion in program processes to consider gender, age, and the most vulnerable, to ensure those most at risk are not further marginalized.

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