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OF INTERNATIONAL WEBINAR
MAY 30 AND JUNE 1, 2021

THE IMPACT OF COVID-19 ON SUSTAINABLE DEVELOPMENT OF CITIES AND SETTLEMENTS



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POSTGRADUATE PROGRAM
UNIVERSITAS KRISTEN INDONESIA
2021

PROCEEDING

THE IMPACT OF COVID-19 ON SUSTAINABLE DEVELOPMENT OF CITIES AND SETTLEMENTS

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PREFACE

Praise the Lord, God Almighty, for His wisdom and grace that the proceedings of the International Webinar with the theme "The Impacts of Covid-19 on the Sustainable Development of Cities and Settlements" can be finished. The Postgraduate Masters Program held the webinar in Architecture, Christian University of Indonesia, and the International Office of UKI Jakarta.

The webinar is divided into two days, the first on Friday, April 30, 2021, and the second on Saturday, May 1, 2021.

The preparation of this proceeding is intended so that the wider community can find out various information related to the implementation presented in the international webinar. The presenters of the international seminar include:

1. Dr. Fang Yenn Teo, from The University of Nottingham, Malaysia
2. Arch. Jemielyn G. Siapno, from DMMMSU, The Philippines
3. Prof. Ir. Johannes Widodo, M.Arch., Ph.D., from NUS, Singapore
4. Prof. Dr. Charles O.P Marpaung, M.S., from Universitas Kristen Indonesia
5. Prof. Dr.-Ing. Ir. Uras Siahaan, lic.rer.reg., from Universitas Kristen Indonesia
6. Prof. Dr. Ir. James E.D Rilatupa, M.Si., from Universitas Kristen Indonesia
7. Dr. Yophie Septiady, S.T., M.Si., from Universitas Kristen Indonesia
8. Dr. Ramos P. Pasaribu, S.T., M.T., from Universitas Kristen Indonesia
9. Dr. Posma S.J.K Hutasoit, S.T., S.E., M.Si., M.SE., from Universitas Kristen Indonesia
10. Leonard Lisapaly, M.Si., Ph.D., from Universitas Kristen Indonesia

We express our gratitude and highest appreciation to the authors and speakers who have contributed their thoughts to this international webinar. We would also like to thank our review partners, editors, and publishers of UKI Press. They have reviewed and maintained the paper quality to be worthy and accounted for the preparation of this proceeding. Finally, we would also appreciate the webinar participants for their attending the webinar event.

Lastly, I hope this proceeding can contribute benefits for all parties, especially for developing the world of architectural education.

Jakarta, May 2021

Chairman of the committee,

Dr. Ramos P Pasaribu, ST., MT.

OPENING SPEECH

Assalamualaikum warahmatullahi wabarakatu
Salam Sejahtera bagi Kita Semua atau *Shalom "Damai"*
Om Swastyastu
Namo Buddhaya
Salam Kebajikan

Honorable Speaker,

Prof. Ir. Johannes Widodo, M.Arch., Ph.D
Prof. Fang Yenn Teo
Arch Jamielyn G. Siapno
Prof. Dr.-Ing. Ir. Uras Siahaan, lic.rer.reg.
Prof. Dr. Ir. James E.D Rilatupa, M.Si
Prof. Dr. Ir. Charles O.P Marpaung, M.S
Dr. Yophie Septiady, S.T., M.Si
Dr. Ramos P. Pasaribu, S.T., M.T
Dr. Posma S.J.K Hutasoit, S.T., S.E., M.Si., M.SE
And all participants

The honourable Mr. Chairman of the Committee, Prodi Magister Arsitektur Program pascasarjana UKI, International Office UKI and all of audience who has participated in this conference.

Ladies and gentlemen, I believe that all of you will do a great discussion through the two days Conference. It is my great pleasure that you will had fruitful discussions though I think two days is not enough.

I expected that every participant to make a presentation about “The impact of covid-19 on the sustainable development cities and settlement” would develop our capacity in writing and strengthen the competitiveness of our university and country.

I wanted you to understand the difference and promote mutual understanding among the participants through the conference.

I would like to pay my deep respect to all the participants for your positive participation in the conference.

I hope that what we have learned through the conference will help us a lot in our duties to build the nation, culture and humanity through high webinar

I hope we can meet again in the next seminar

Finally, on behalf of Universitas Kristen Indonesia, I would like to express my appreciation to all the participants for taking time out of your busy duties to participate and to all your organizations for sending excellent participants to the conference.

I would like to close my remarks and officially announce the **opening** of this webinar wishing the future prosperity of all us. God bless all of us

Thank you for your attention.

DR. Wilson Rajagukguk, MSI., MA Ministry

Vice Rector for Academic Affairs, Universitas Kristen Indonesia

Keynote speech

Internasional - Web Seminar

THE IMPACTS OF COVID-19 ON THE SUSTAINABLE DEVELOPMENT OF CITIES AND SETTLEMENT

Prof.Dr.-Ing. Ir. Uras Siahaan, lic.rer.reg.
Master of Architecture Program, Post Graduate Program
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ABSTRACT:

The main targets of Sustainable Development (SDGs) are poverty alleviation, access to basic services such as clean water, energy and sustainable economic improvement. Increasing and achieving this target requires improved and guaranteed urban management that also reaches the economically vulnerable community. Another target is to remove service disparities, economic pressures, and environmental problems resulting from poor city governance. Urban development occurs horizontally or vertically. The arrival of the corona outbreak has changed the urban spatial structure, community life and the city transportation system. A decrease in the number of passengers, reduced public activity results in a decrease in public transportation services, albeit for a non-permanent period. It has contributed to improving the quality of surface water, air and the environment. The positive effect of the corona outbreak can also be felt in a clean way of life, which is the main requirement in eradicating the coronavirus. In addition, the impact of the corona outbreak can be felt in the field of education, where various education and development activities have to be eliminated, and distance education with all its limitations must be implemented immediately. It is worrying that a gap will appear between conventional and digital style education at the latest five years.

Keywords: Corona outbreak, Sustainable Development and Cities and Settlements

INTRODUCTION

Good afternoon, ladies and gentlemen. Thank you for attending this web seminar. First of all, I want to explain the basis and purpose of holding this web seminar because we are concerned with what is happening around us. We must be aware of the Covid-19 atrocities. Many new things cause us to change the way we live and think. I take this opportunity to express my concern and try to formulate it through this web seminar. Please allow me to begin my speech. Thank you.

Cities and towns are always developing with the support of the surrounding area. The relationship between these regions will determine the urban development. Nevertheless, it also means giving reciprocally positive and negative impacts on the neighbours. Thus the sustainable development of cities and their settlements are highly interdependent. For sustainable development, the UN has mentioned 17 Sustainable Development Goals (SDGs). Some of them relate to urban and settlement development, which is said to have not yet addressed the root problem. Some of the main problems that could not be resolved until the end of the MDGs era (UN, 2016) such as the wide gap between poor and rich households, between rural and urban areas, gender inequality, war conflicts, scarcity of access to basic

services for the poor and climate change and environmental degradation which undermines the progress that has been made and the poor, especially those affected by it

Poor Urban Management

Various problems can arise due to city growth without good governance, three of which are (by Jillian Du (WRI) and Anjali Mahendra (WRI) - February 04th 2019):

- Growing inequality: poor service provision and overcrowded city capacities exacerbated by uncontrolled expansion of urban areas. The high cost of residential land in urban areas encourages job-seeking residents to acquire government land both in the central and periphery areas, resulting in expensive transportation into the city.
- Economic pressures throughout the city: Based on several previous studies, we found out that horizontal urban growth can reduce population density, but that public services will increase, such as roads, electricity and clean water. It is evident in India and major cities in Africa, through more than 5 kilometers from the city center, the facilities of paved roads, drinking water are drastically reduced
- Environmental concerns: The growth rate of urban areas far outstrips population growth at the expense of agriculture and forestry. Uncontrolled growth has damaged sensitive ecosystems and a burden on natural resources resulting in catastrophic flooding in several cities in South Asia. In addition, very limited water supply services and high water pressure resulting in flooding throughout the city.



Figure 1: Informal settlement on the outskirts of Mumbai, India.

Figure 2: Photo by Johnny Miller / Unequal Scenes The area of Lagos is expected to double by 2050. Photo credit by Heinrich-Böll-Stiftung / Flickr

56.7% of the population lives in urban areas. It is estimated that in 2035, around 66.6% of the population will live in urban areas. Therefore, cities must have the ability to withstand the pressure or shock caused by natural and non-natural disasters, including disease outbreaks.

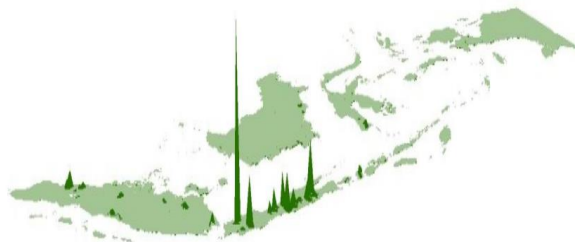
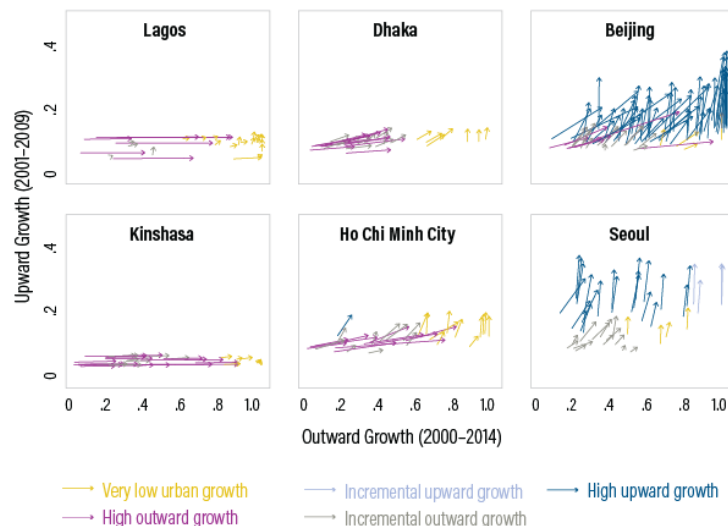


Figure 3: Java-Bali-Lombok Metropolitan Regions
Using The Agglomeration Index

Controlling Unmanaged City Expansion

Many cities in Africa and South Asia grew horizontally unplanned and illegal. It occurs in weak planning and governance areas, beyond city control, and pressures for population growth. Expansion often occurs naturally, as happened in DKI Jakarta. Hopping city building happened. Development also occurs on a speculative basis, based on market needs, corrupt real estate developers and city government officials, who are selfish due to rapid land price increases

Cities in Colombia, South Korea, and India are gradually adding new land in locations already connected and have good service access by partnering with public facilities and private companies to support financing.



Note: The arrows represent different areas within a city. The length of each arrow captures change in built-up area over time.
Source: World Resources Report: Upward and Outward Growth

 WORLD RESOURCES INSTITUTE

Figure 4: Cities Growth Outward and Upward
Some Cities are growing outward, while others are growing upward.

The Covid-19 Pandemic

We have been shocked by the problem of this pandemic since mid-March 2020, and there are no signs that it will end. On the contrary, the development of this viral malignancy continues, creating new mutants and variants, which causes humans to struggle, increase their body power, seek possible treatments and at an advanced stage also how to eradicate this virus once and for all.

We see its widespread impact, not only on public health but also on the economy, international relations, to national defense. Therefore, the whole world must work together in handling it, looking for ways to reduce its malignancy, and in the end, the herd-system or immune system of each one will be sought.

What impact will the Covid-19 pandemic have most felt on the development of cities and settlements? It is the topic of our discussion today and tomorrow in this international Webinar.

The corona pandemic is changing the spatial structure of the city

The problems of big cities in Indonesia, especially in solving the problem of their slum settlements. The number of slum areas is estimated to have doubled, especially on the island of Java. What will be the consequences of the Covid-19 pandemic?

High population densities occupy slum areas, often included in the informal sector. The characteristics of this type of settlement are unclear property rights, poor quality of houses, not getting adequate infrastructure services and poor sanitation.

Another difficulty is that slum settlements often do not get clean water from the city. As a result, it made it difficult to support hygiene to prevent a pandemic, which is a major requirement for COVID-19.

In slum areas in Indonesia, for example, North Jakarta, sanitation solutions are often found by constructing toilets, bathing and washing together. With this system, physical distancing is difficult. The public toilets have to be rotated for many residents and family heads. In certain conditions around the factory, factory workers in rotation occupy boarding houses. One person occupies 8 hours per day, the remaining 16 hours are spent in factories. This condition and the worsening economic condition forced residents to continue to struggle to make a living outside the home. The Head of the RT was reluctant to prohibit residents from leaving the house.

Procedures for Community Life After the Covid-19 Pandemic

The corona pandemic has changed the way of life in society. Cleanliness is the main factor, so it is often seen that the supply of clean water for washing hands, cleaning soap and dryer is seen at the alley's mouth and the entrances of offices, apartments and malls. For areas with abundant water, such as in Indonesia in general, this can be done immediately, but it is not easy to implement for some areas.

The threat of the Covid-19 Pandemic in Slum Settlements

Approximately there exist 187 countries affected by Covid-19. The problem of handling revolves around the role of the central and local governments. Particular attention is paid to the red zone, the area with the highest impact. The effort of control thus becomes per space. The distance system, the prohibition on going outside all of these go against the urban principle, which emphasizes more efficient use of space, public transportation, land use. It is known as the "anti-city thesis. Thus, space will be very wasteful and inefficient; the ratio of the population per activity space will be explained below. The closure of social, public facilities, utility management and public transportation to low capacity have been expected

with high capacity. The characteristics of a city are always in the form of density. A few people per hectare, and the city develops and functions as a growth pole for the surrounding area becomes a center of power.

To maintain this power, the people of the cities must fight against this pandemic and be seen as the main contributors to the pandemic.

The Covid-19 Threat to the Sustainable Development Goals

The relevance of the Social Development Pillars said that the middle class supports 42% of national consumption, and the middle class pays 53% of national taxes.

Thus, the resilience of the middle class needs serious attention.

For the Economic Pillar, the impact is worse than the economic crisis in 2008-2009. the 2020 Global Economy is projected to grow negatively and experience a recession. There is a risk of achieving the sustainable development agenda in 2030.

The Economic, Financial and Covid-19 Crisis affects the Food Crisis. As a result of the Covid-19 pandemic, there has been a decrease in welfare in all income groups. Covid-19 are people below the poverty line of 10.86% and poor and vulnerable people of 30.77%. Thus the government also carries out social protection programs in handling Covid-19.

The threat of Covid-19 to the Indonesian Economic and Banking Crisis:

The economic, financial crisis and the world Covid-19 Pandemic have rapidly affected developments in Indonesia. For example, during the Asian economic crisis in 1998, the rupiah exchange rate deteriorated from Rp. 2,450 / US \$ to Rp. 16,650 / US \$, economic growth from 4.7% to -13.7%, inflation to increase to 82.4%.

In 2008 there was a wave of the economic and financial crisis in Indonesia. Mentioned that the banking and financial crisis in the US had caused oil prices to jump to 120 US \$ / barrel and inflation in Indonesia to 12.2%, the exchange rate increased to Rp. 12,650 / US \$. This crisis has an impact on increasing food prices, transportation costs and trade logistics increase by 10%

Education Policy due to Covid-19

Covid-19 also has an impact on the primary education sector, modifying it to high. Various factors affect education; for example, in distance learning (online) education, teachers and lecturers are not ready with online learning materials and systems. IT infrastructure constraints and internet costs in online learning, PSBB policies, Stay at home, technology/internet access constraints, especially for poor, vulnerable and remote areas.

Relevance of Sustainable Development

The SDGs Relevance Development Pillars are mentioned in Social, Economic, Environment and Law and Governance. The number of Covid-19 cases has exceeded 3 million cases with centers in Europe and the USA. The following Covid-19 development centers are estimated to be Brazil, India and Indonesia. It is estimated that the impact on economic growth will be worse than in 2008-2009.

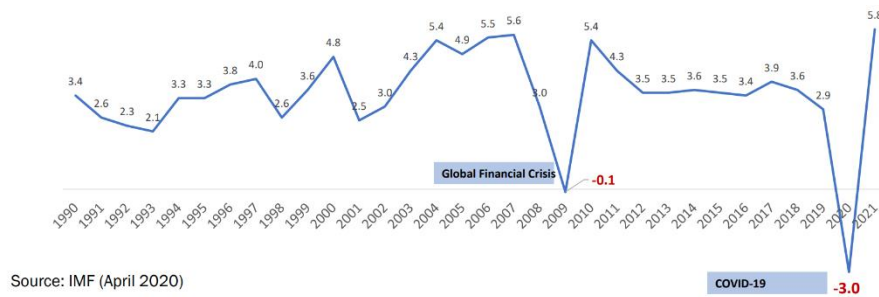


Figure 5: World Economic Growth in %

SDGs Relevance to Pillars of Economic Development:

The Relevance of SDGs to the Pillars of Social Development

There has been a decline in welfare in all income groups. Covid-19 are people below the poverty line of 10.86% and poor and vulnerable people amounting to 30.77% of this group.

In the field of education, in the emergency period of the spread of Covid-19, learning from home through online / distance learning, online / distance school exams, 2020 National exams were cancelled, and new student admissions implemented strict health protocols to prevent the spread of covid-19.

A pandemic can cause social unrest, which will threaten the economy, unemployment due to layoffs and the entry of a new labour force.

In the 2020 development target scenario, it is stated that social protection interventions that have been implemented can reduce the impact of the Covid-19 pandemic on poverty. This intervention is expected to reduce the number of poor people to only 24.91 million compared to 2019; thus, it is expected to reduce by 3.5. millions of people belong to the poor.

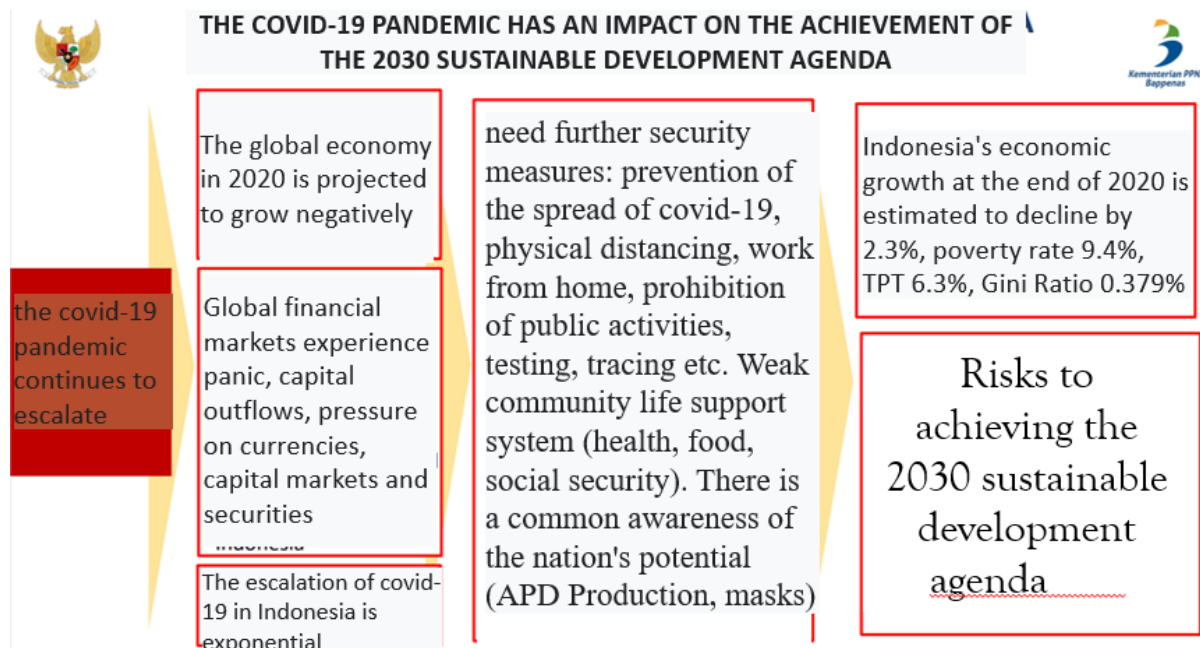


Figure 6: The Covid-19 Pandemic as Impact on the Achievement of The 2030 Sustainable Development Agenda

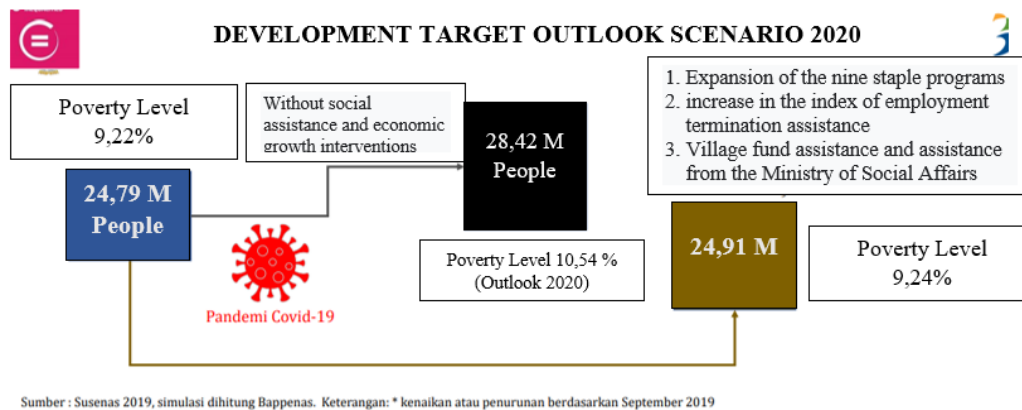


Figure 7: Development Target Outlook Scena

SDGs Relevance to the Pillars of Environmental Development



Impact of Covid-19 on the Global Environment *Air Quality*

Stop most industries have had a positive impact on the environment, the level of air pollution has decreased.

Reducing CO₂ Emissions and the Climate Crisis

CO₂ emissions have decreased significantly, but this is temporary. *Improved Urban Air Quality* as evidenced by New York City data with air pollution levels reduced by about 50%, China: Emissions down 25% in 2020, air quality up 11.4% in 337 cities in China, Europe: Satellite imagery shows warning nitrogen dioxide emissions (NO₂) over Northern Italy, Spain and England, Jakarta: Improved air quality, decreased concentration of PM 2.5 parameters during the implementation of WFH and the Jakarta Air Quality Index (AQI) on April 02nd at 20:25 WIB is in the 33rd position of the sequence high-polluted cities, meaning Jakarta's air quality is better than 32 other cities, with AQI at 64.

Water Quality Improvement

The canals ran clear: With the boats leaning in the city of Venice due to the lockdown, the oceans also experienced a decrease in noise pollution, thereby reducing the stress level of marine creatures such as whales, and can migrate in peace.

Increase in Medical and Non-Medical Waste

Unfortunately, the covid-19 pandemic has increased medical waste such as PPE and non-medical materials, such as another packaging.

Decreasing use of public transportation: Transjakarta: The decrease in the number of passengers on April 15th was only 83 thousand people per day, or down 34.52% compared to previous months, the Integrated Public vehicle (Moda Raya-MRT): loss of passengers in significant numbers, on April 15th only around 5 thousand people, or down 94.11% compared to January 2020, Commuter Line Electric Train (KRL): there has been a decrease in passengers on April 15th, only 183 thousand people per day, or down 78.69% compared to January 2020 and Light Rapid Transit (LRT): Also has experienced a decrease in the number

of passengers on April 15th, only 264 people per day or down 93.05% compared to January 2020

Evaluation of the Implementation of the PSBB Policy in the Transportation Aspect: Urban transport passenger (MRT, LRT, Trans Jakarta, Commuter Train) down 88%, the average AKAP and train bus passengers in and out of Jakarta fell by 93% and the average traffic volume in Jakarta. Jakarta down 8.2%, in Bandung Raya down 9.6%

Policy Response to Covid-19 stages in handling Covid-19: Strengthening Health Facilities, Protecting vulnerable community groups, Reducing Financial Sector Pressure, The post-Covid-19 economic recovery program.

Post-Covid-19 recovery strategy:

Learning & Urban Development

Urban development requires Medical Facilities as Part of Urban Services. Especially during a pandemic, public health services are very vulnerable and need strong support from the city government. For this reason, the provision of basic urban infrastructure and facilities must be available properly

Dense Settlement Readiness to Face the Covid-19 Pandemic

More than 55% of the population resides in urban areas. According to statistical data from BPS, the Indonesian urban population in 2019 (Worldometers) is 150.9 million or 55.8% of Indonesia's total population of 270.6 million. According to the predictions of Dodo Julliman (housing and settlement development practitioner), this figure will increase to 67.1% in 2045. There are 15.5 million or 36.9% of urban households who live in housing units below standard.

High density, poor housing ventilation, sanitation, and lack of clean water have caused DKI Jakarta to become the center of the spread of disease outbreaks.

City and Corona

Figure 8: Village Living in the Metropolitan City Jakarta

For example, the cholera pandemic of the 19th century has prompted city governments to build a modern city sanitation system. This pandemic shows the importance of proper sanitation for the entire city of DKI Jakarta, not limited to certain sectors. Slum settlements in cities in the industrialization era 1.0 gave birth to European housing regulations regarding air circulation and lighting in homes.

The emergence of the Covid-19 pandemic has added new aspects to urban development, so that it must be rearranged, adapting to the phenomena of changing life in our cities, changes that occur very suddenly, without preparation. Work from home, children, learn from home, universities are competing to provide an online (long-distance) education system, internet users are soaring fast and sharp, the use of electrical energy is also very large, has happened now.

The World Economic Forum (2020) emphasized that the Covid-19 pandemic warns humans to stop overreaching in exploiting nature.

Healthy city development is supported by fiscal policies and clear sources of financing, such as state / regional budget (APBN / APBD), non-APBN / APBD, government and business entity cooperation (PPP)

Digitalization is an important key to implementing new normal activities that will support the population to rise from the pandemic. Urban planners are challenged to move from conventional understanding to a new normal in urban rearrangement with the support of the

Only 4 dense / slum RWs are in areas with a high number of Covid-19 patients (Pegadungan, Pondok Kelapa, Pondok Pinang, Senayan, Kalideres, Kelapa Gading East and Kebon Jeruk).

CONCLUSIONS AND SUGGESTIONS

Some steps that need to be carried out at this time in the development of cities and sustainable settlements are:

1. Provision of access to clean water, energy and improvement of poor housing and sanitation conditions, especially for basic health services in dense and slum settlements;
2. Provision of affordable housing, quality public spaces, rejuvenation of densely populated and slum areas, limiting the height of residential buildings, offices and shopping centers, which comply with health standards, guaranteed clean water, electricity, gas and the internet for learning activities and work from home;
3. Placement of green, blue and grey open spaces, climate change mitigation and adaptation strategies, providing parks as places for emergency services and evacuation protocols;
4. Increase the capacity of urban and regional planning and be integrated into the health and mitigation system, the provision of clean city water, gas, electricity, renewable energy, integrated transportation, internet networks and a combination with urban agriculture (hydroponic) for food security as a pillar of urban resilience;
5. Provision of data (big data) accurate in all city areas, sub-district to the urban village to assist rapid crisis response actions;
6. Further and advanced development in the primary and secondary education system, which can adapt to technological advances without compromising the continuation of social relations between the people.

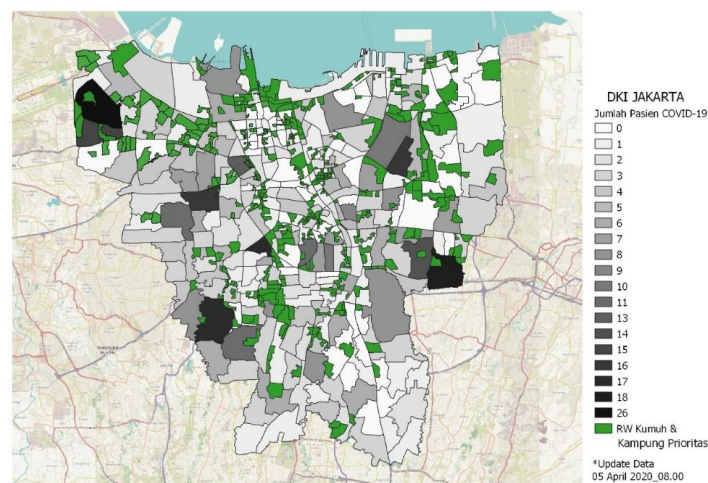


Figure 9: Number of Covid-19 Victim in Jakarta, April 5th 2020

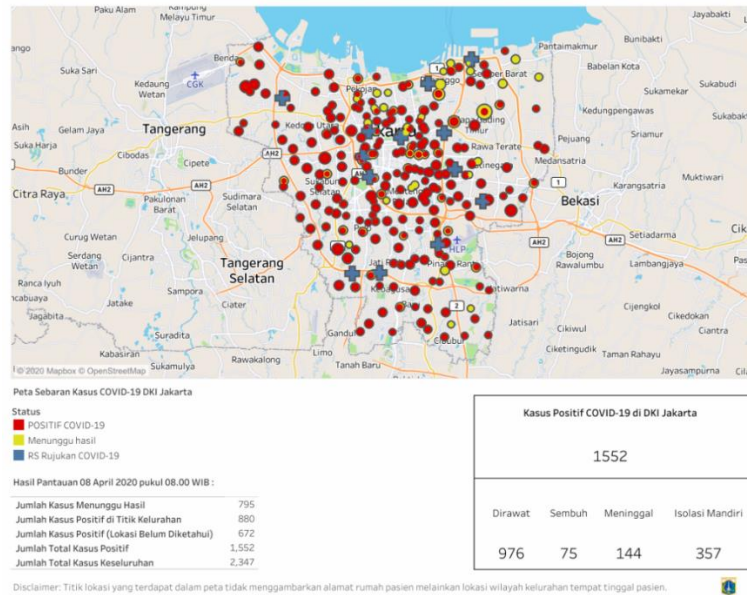


Figure 10: Covid-19 Positive Case in Jakarta, April 2020

There are three vulnerabilities of urban villages to pandemics, namely lack of basic infrastructure, latent vulnerability related to residential security, and the pandemic's impact because village communities rely heavily on the informal sector with fluctuating incomes to support their daily needs. Their work is very mobile, moving from one place to another, cannot be done from home alone, such as "work from home" (WFH). The weakness of the DKI Jakarta Regional Government is that it does not use RW maps to show the spread of Covid-19. It needs to be the attention of the local government of DKI Jakarta. It could not be proven whether middle-class employees were exposed to the coronavirus more than residents from the informal sector. It needs to be known to make the right movement in overcoming the coronavirus.

Thank you

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