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POLICY BRIEF

Jakarta Underwater: Leave your home or fight to stay?

(Kimmelman & Harter, 2018)



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Jakarta Underwater :Leave your home or fight to stay?

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(Kimmelman & Haner, 2018)

Key Messages

- Relocation is not a viable option as it requires massive cost and comprehensive planning.
- Comprehensive plans based on participatory decision-making are preferred as communities' livelihoods rely on.
- Find and develop feasible alternative solutions that are socially and environmentally sustainable development considering local concerns and pre-existing socio-economic problems.

Rising Sea Level is a Global Threat

Scientists and policy makers alike have warned that human security risks may spill-over into higher-order security risks. This may lead to political instability, intra-state conflict, major natural disasters involving significant military responses, mass displacements of peoples, and threats to critical resources and infrastructure. Other key risks that must be observed including geopolitical impact of climate change including regional and inter-state tensions and conflicts (The Expert Group of the International Military Council on Climate and Security, 2020)

Rising sea level is one of the consequences of climate change. According to the WCRP Global Sea Level Budget Group (2018), between 1993 and 2018 thermal expansion of the oceans contributed 42% to sea level rise. Sea level can increase the risk of flooding which affects national security by threatening the country's infrastructure, economies, public health, public property, and ecology. Thereby imperative for countries and communities which have been encountering the threat of sea level rise to prepare mitigation and adaptation strategies.

Mcdonald (2021) reported on the World

Bank report showing the threat faced by Marshall Islands. The North Pacific country with a population of 59,000 is at risk of disappearing due to sea level rise. The report stated that a 1-meter sea level rise will permanently flood 40% of the buildings in the capital, and frequent flooding for 96% of the 20,000 populated city.

The Intergovernmental Panel on Climate Change (2021) in its report stressed the need for immediate, rapid and large-scale greenhouse gas emissions to avoid crossing the 1.5°C global warming threshold. The report further stated that the changes to normal climate patterns will increase with additional warming, among others continued global average sea level rise (15-30 cm) through the middle of the century and extreme sea level events that previously occurred once in 100 years could happen every year by the end of this century.

The threat is real not only for Marshall Islands and other island communities, but also for many nation's capitals and major megacities built on the shorelines. In 2021, New York City and New Jersey faced an unprecedented flash flooding and tornadoes

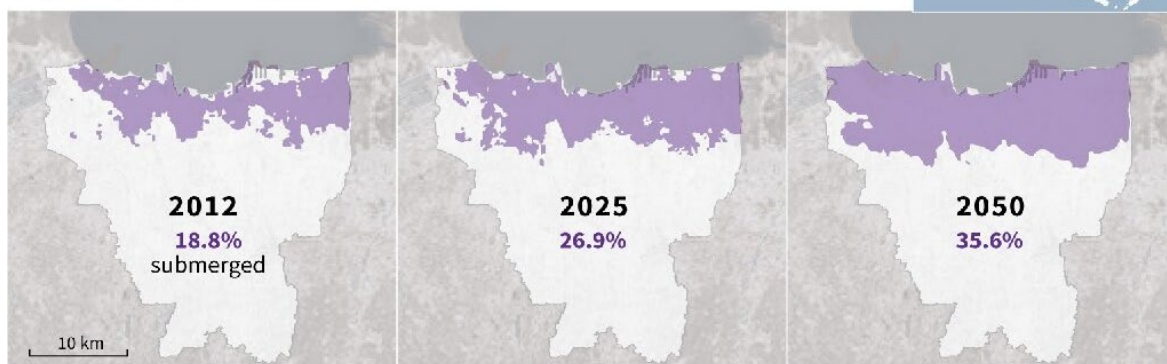
(Levenson & Barnard, 2021). The recent disaster may be attributed to the storm Ida which caused heavy rainfall, overloading the drainage system. However, it is without a doubt that the city itself is facing problems from groundwater extraction and its proximity to two large rivers.

Mega Cities throughout the world (Jakarta, Bangkok, Shanghai, Mexico City, Lagos, Dhaka) are facing the same threat of sea level rise and compounded with the threat of land subsidence, mainly due to excessive groundwater extraction (Erkens et al., 2015)

The Jakarta Case

Sinking Jakarta

More than a third of the Indonesian capital could be submerged by 2050, according to expert forecasts



Source: Bandung Institute of Technology

© AFP

(Bandung Institute of Technology, n.d)

The notion that Jakarta, a mega city with a population of 10,562,088 (Jakarta Statistics Agency, n.d.), is sinking is not new. The notion resurfaced in Indonesia after the U.S. President Joe Biden made a reference to it in his July 27, 2021, remarks at the Office of the Director of National Intelligence. Biden remarked that the greatest threat facing America is climate change, and if the world sees a

rise of 2.5 feet (76.2 cm) in sea level it will trigger mass migration and fight over arable land. If the projections are correct, Indonesia will have to move the Capital since Jakarta will be underwater (The White House, 2021).

It is worth noting that the current President of Indonesia, Mr. Joko Widodo, has not make any comments regarding the projection that Jakarta is sinking since 2019. President

Widodo, previously the Governor of the Jakarta, last spoke about the issue in 2016 and 2019, pushing for a speedy completion of the giant sea wall project (Laub, 2019; Deutsche Welle, 2016). In 2019, shortly after winning his second term in the office, President

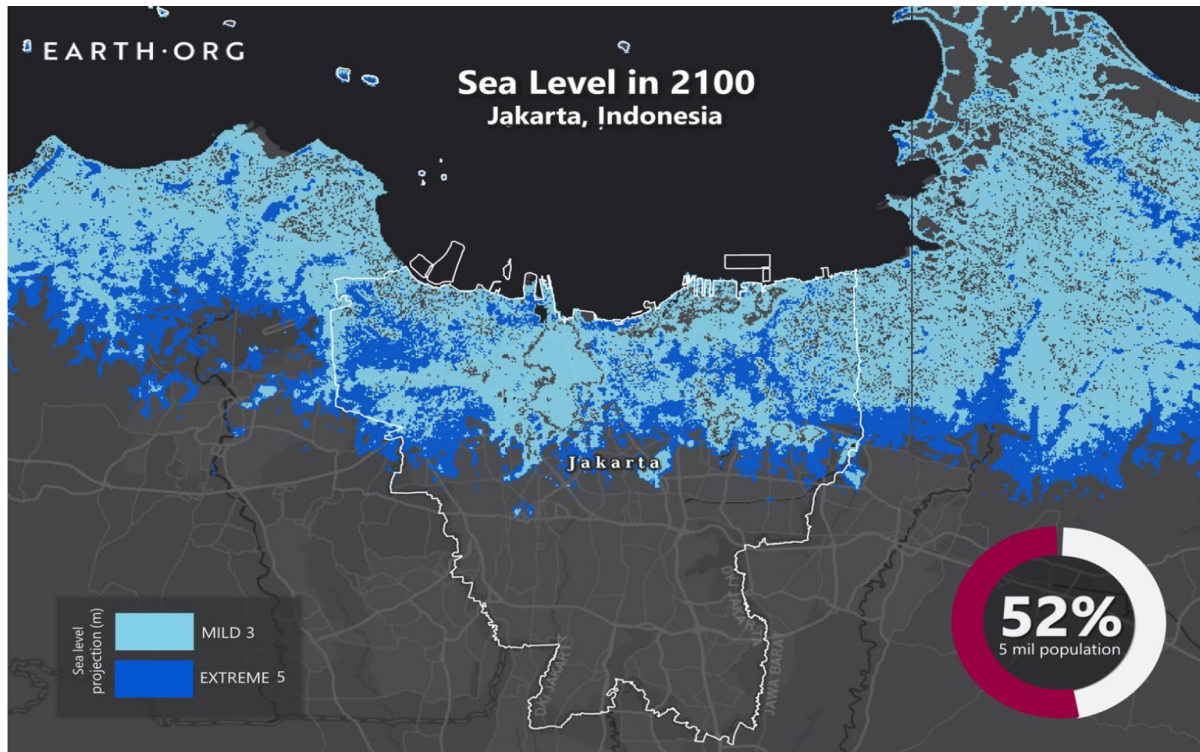
Widodo announced the government's plan to move the capital from Jakarta to East Kalimantan. The development of a new capital is ongoing despite the complications brought by the covid-19 global pandemic (Meiliana, 2021).



Dutchwatersector.com in Saturi (2017)

The Giant Sea Wall, also known as the Garuda Project, is the Indonesian government's answer to the sinking Jakarta. Octavianti & Charles (2018) described that the Indonesian Government, with cooperation from the Government of the Netherlands, has launched the National

Misdirected Policies?



(Earth.Org, 2020)

As instructed by President Widodo, the government put a lot of focus in constructing the giant sea wall. It is believed that this policy formulated in association with the Dutch, known as the leading experts of coastal development, is the answer of the many woes of

Jakarta's residents (Reuters, 2018). The plan was updated in 2017 to include the existing man-made islands originally build independent of the NCICD (Badan Pembangunan Infrastruktur Wilayah, 2017).



NCICD Executive Summary (2017)

Based on the NCICD Executive Summary (2017), the project consisted of three phases based on urgency:

A. **Phase A**, a critical phase with no-regret approach consisted of building and reinforcing a 20.1 km long dike in North Jakarta, as well as reinvigorating the many rivers crossing Jakarta. This phase has been scheduled to be finished in 2020, however due to many complications, the process has yet to be concluded.

B. **Phase B**, a mid-term phase, focused on construction of an offshore giant sea wall for the Western part of Jakarta Bay. Although the Indonesian Government has secured support from the Netherlands and the Republic of Korea, it appears this phase that was scheduled to start in 2018 and to be finished in 2022 has yet to be started.

C. **Phase C**, optional phase, is the construction of the east outer great seawall, effectively closing off the Jakarta Bay to further reduce the pressure of sea water intrusion in the eastern part of Jakarta.

NCICD is deemed a controversial project by many. Academics (among others Erkens et al., 2015; Deltares, 2015; and Abidin et al., 2011), and the government, has acknowledged that Jakarta is threatened not only by sea level rise, but also by the land subsidence. The intensified flooding in Jakarta as well as increased inland seawater intrusion has been linked by academics to land subsidence (Brinkman & Hartman, 2009, Onodera et. al, 2009; Soekardi et. al., 1986). NCICD, however, failed to address the issue of land subsidence, and focusing only on the rise of sea level.

The closing of the bay area in Jakarta, as a result of the NCICD, faced a lot of resistance, including from the academics. The USD 40 billion project is using a top-down approach and does not take into account the voices of the community it is claiming to protect. In the NCICD Master Plan (The Coordinating Ministry of Economic Affairs, 2014) the

considerable effects of the development to the community in the coastal areas were not adequately considered.

There are many kampongs and residential neighbourhoods in the coastal area since it offers employment opportunities from fishing or in the nearby Tanjung Priok seaport. These areas are considered slum areas and some illegal housing. The Government is trying to relocate the population of these communities into low-rise low-cost apartments, however so far these efforts have been met with differing results.

The construction of the sea wall, and the 17 man-made islands (originally not part of the NCICD but then incorporated into it in 2016) has proven to be problematic to the livelihood of the fishing communities. Mauriend (2018) identified the following issues arising from the reclamation: changes in sea pattern and fishing locations; loss of access to livelihoods for those who have to relocate; loss of

sustainable livelihoods due to sudden change in life.

The same issues can be said with construction of the dike along the coastal area. It directly affected the livelihood of the communities currently living in the area. The whole project will surely need to resettle the slum areas in North Jakarta to elsewhere (Sherwell, 2016).

To alleviate the burden on Jakarta as the capital city, the Indonesian government has also started the construction of a new capital city in East Kalimantan. The USD 33 billion project was initially scheduled to complete construction of government offices in 2024, but it must be put on hold due to the Covid-19 pandemic (The Jakarta Post, 2020). While the country is prioritizing its economic recovery, it also serves as an opportunity to discuss relocation plans with affected communities and hear local voices and redevelop an inclusive policy.

Fighting for a Sustainable Solution

In 2021, NCICD is still the chosen policy of the Indonesian government to address the issue of sea level rise vis-à-vis Jakarta. Jamero et al. (2017, 2018, and 2019) and Esteban et al. (2019) shared the lessons

learned from their research on mitigation and adaptation efforts in low lying small island communities in the Philippines. According to their research, successful adaptation efforts need to be inclusive and address the needs of

the most vulnerable groups in the community. In the research, communities viewed relocation as a last resort and will always work on adaptation responses.

Eriksen et al. (2011) stated that successful adaptation measures must be socially and environmentally sustainable to allow development pathways. Research by Mirza (2003) concluded that constant capacity building through partnership between developed and developing countries with a focus on climate mitigation will provide a more sustainable future for communities.

The social and culture dimension of the threat of sea level rise and its mitigation effort must not be sidelined. It is the responsibility of each and any governments to protect the basic rights of its people, including social justice. With this in mind, we are proposing the following policies and framework to mitigate the effect of sea level rise in

1. Relocation as a last resort

Relocation, although appears to be a sound policy, remains a complex issue, as it requires long term planning and massive resources, and it will put a heavy strain on the most vulnerable groups: women, children, and the elderly. Especially true for mega-cities and

island-countries. The Government needs to look for alternative policies that will address the threat, while providing a better future for the communities.

While some residential areas in Jakarta coastal areas inevitably needs to be relocated due to health and sanitary concerns, most residents have insisted to remain and adapt to the rising of sea level as well as the effect of NCICD projects. This adaptation measures includes changes in fishing ground and activities, as well as raising their homes to reduce the effect of flooding.

The government need to provide assistance in the form of laying the legal framework and building infrastructures and facilities that centered on the need of the vulnerable groups of communities to preserve their culture and livelihoods.

2. Communities' involvement and avoiding maldapation

Building a giant sea wall and affecting changes at the community level without consulting the communities themselves will result in non-compliance. The government did not meaningfully involve the impacted communities on the Great Garuda Project, nor about the threat of sea level rise, thereby severely reducing ownership of the

communities.

The USD 40 billion project is regarded as a top-down policy, the affected communities as well as academic communities panned the project as lacking in transparency and inclusivity. It is viewed to benefit more to the powerful real estate developers, rather than the community which have been living under poor conditions for the last decade.

Pursuing the cooperation of local communities and facilitating local ownership of adaptation responses between local communities is imperative for decision makers. Adaptation measures must be linked to sustainable development. Empirical evidence and impact analysis information dissemination are needed to show urgency in every level. Wise use of the power of social media is detrimental to reach and gain the support from the public.

Jakarta, being an old colonial city, has a basic problem, restricted water access in the city causing most of its residents have to extract groundwater to survive (Thornell, 2021). This issue has been neglected by the government in their mitigation plan and has proven to compound the issue of sea water rise, which will cause the city to be one of the first in the world to permanently fall victim to the sea.

The impacted community demanded the government to improve their living conditions while maintaining their livelihood and culture. Short term direct actions are needed, aside from reinforcing the dikes, the community needed better sanitation, dredging and draining of inundated areas, better and bigger water pumps, as well as access to clean water.

In the medium-term actions, communities need proper support from the government as well as the ability to maintain their livelihood. This can be done through better adaptation measures, such as introduction of sustainable fisheries (farming), and more flood-resilient building construction techniques.

3. Long-term consistent mitigation policy is needed

The rise of sea level is a problem of a global level, the way to recovery has to start somewhere. As stated in the Indonesian Nationally Determined Contribution to the United Nations Framework Convention on Climate Change, Indonesia is committed to reduce GHG emissions by up to 41% below the 2030 business-as-usual scenario with international assistance, and 29% below the 2030 business-as-usual scenario unconditionally.

In the NDC, Indonesia has stated that it is anticipating long-term impacts from sea level

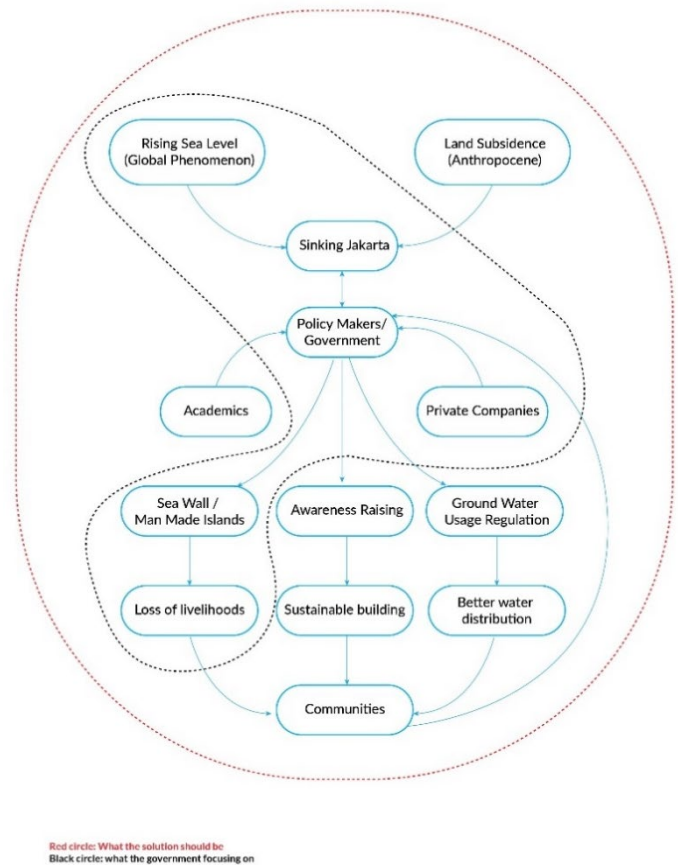
rise as a threat to the most vulnerable groups. The way out proposed in the document is to strengthen climate resilience through adaptation and mitigation efforts, which has been updated in the Annex 2 of the updated NDC.

As with all the other NDCs Indonesia's NDC is also under critiques by various organisations and researchers as being not enough to make a difference. Nevertheless, the key programmes already outlined in the NDC should act as a guidance and mainstreamed into all policies and disseminated to all stakeholders.

It will take the cooperation and collaboration of all nations and in every level to overcome a challenge of this magnitude, as the sea level rise poses not only a threat to one country or community, but it is a clear and present danger to human security.

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Need for Community Adaptation in the Sinking Jakarta



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