



Climate Crisis as a National Security Threat: Challenges and Strategies of Indonesia

Brandy Emerson Ridho¹

International Relations Department, Social and Political Sciences Faculty, Hasanuddin University

*Korespondensi penulis: brandyridho16@gmail.com

Abstract. *Climate change has emerged as one of the most pressing and multifaceted threats to national security across the globe, including in Indonesia. The consequences of climate change extend far beyond environmental degradation, posing significant risks to critical sectors such as food security, water resources, social cohesion, and the overall stability of national defense systems. Rising temperatures, shifting precipitation patterns, and the increasing frequency of extreme weather events—such as floods, droughts, and storms—have direct and indirect impacts that undermine the resilience of communities and the functionality of state institutions.*

In Indonesia, a country characterized by its vast archipelago and diverse ecosystems, the climate crisis presents unique challenges. The vulnerability of coastal regions to sea-level rise threatens the livelihoods of millions, while disruptions in agricultural productivity jeopardize food availability and economic stability. Moreover, these environmental stresses exacerbate social inequalities and can trigger internal displacement, heightening the risk of social unrest and conflict. Such dynamics underscore the critical intersection between environmental changes and national security concerns.

Keywords : *Climate crisis, National security, Threat, Indonesia, Strategy*

Abstrak. Perubahan iklim telah muncul sebagai salah satu ancaman paling mendesak dan beragam bagi keamanan nasional di seluruh dunia, termasuk di Indonesia. Konsekuensi dari perubahan iklim jauh melampaui degradasi lingkungan, menimbulkan risiko signifikan terhadap sektor-sektor penting seperti ketahanan pangan, sumber daya air, kohesi sosial, dan stabilitas keseluruhan sistem pertahanan nasional. Meningkatnya suhu, pergeseran pola curah hujan, dan meningkatnya frekuensi peristiwa cuaca ekstrem—seperti banjir, kekeringan, dan badai—memiliki dampak langsung dan tidak langsung yang melemahkan ketahanan masyarakat dan fungsi lembaga negara. Di Indonesia, negara yang dicirikan oleh kepulauan yang luas dan ekosistem yang beragam, krisis iklim menghadirkan tantangan yang unik. Kerentanan wilayah pesisir terhadap kenaikan permukaan laut mengancam mata pencaharian jutaan orang, sementara gangguan dalam produktivitas pertanian membahayakan ketersediaan pangan dan stabilitas ekonomi. Selain itu, tekanan lingkungan ini memperburuk ketimpangan sosial dan dapat memicu perpindahan internal, meningkatkan risiko keresahan dan konflik sosial. Dinamika tersebut menggarisbawahi persimpangan kritis antara perubahan lingkungan dan masalah keamanan nasional.

Kata Kunci : Krisis iklim, Keamanan nasional, Ancaman, Indonesia, Strategi

1. INTRODUCTION

The climate crisis has rapidly evolved into one of the most critical challenges confronting the global community in the 21st century, with far-reaching consequences that extend beyond environmental degradation to impact economic stability, social cohesion, and national security. The Intergovernmental Panel on Climate Change (*Climate Change 2022: Impacts, Adaptation and Vulnerability* | *Climate Change 2022: Impacts, Adaptation and Vulnerability*, n.d.). Reports that climate change is driving an increase in the frequency and severity of extreme weather events,

including heatwaves, floods, droughts, and storms, which disrupt ecosystems and threaten the availability of essential resources such as food and water. For Indonesia, a nation comprising over 17,000 islands and home to a population exceeding 270 million, these climate-induced hazards pose significant risks that exacerbate existing vulnerabilities related to geography, demography, and socio-economic conditions (Ministry of National Development Planning/Bappenas, 2021,). Indonesia's unique geographical position makes it highly susceptible to the adverse effects of climate change. Coastal areas face rising sea levels and increased flooding, while inland regions experience prolonged dry spells and water shortages.

These environmental changes have direct implications for the country's food security, public health, and infrastructure resilience, all of which are integral components of national security. Moreover, the socio-economic disparities across regions can be aggravated by climate stressors, potentially leading to increased migration, competition over scarce resources, and heightened social tensions (United Nations, 2021,). Such dynamics underscore the multifaceted nature of the climate crisis as a threat multiplier that can destabilize communities and challenge the effectiveness of governance structures. Recognizing the gravity of these threats, the Indonesian government has taken proactive steps to integrate climate change adaptation into its national security agenda.

The formulation of the National Action Plan for Climate Change Adaptation and Disaster Risk Reduction reflects a strategic commitment to building resilience across sectors vulnerable to climate impacts (Ministry of Environment and Forestry, 2023,). This plan emphasizes ecosystem restoration, sustainable water management, and disaster preparedness as critical pillars to mitigate the risks posed by climate variability. However, despite these policy frameworks, Indonesia continues to face significant hurdles in implementation. Constraints such as insufficient financial resources, fragmented institutional coordination, and limited technical capacity hinder the full realization of adaptation and mitigation goals (World Bank, 2023). The global nature of the climate crisis necessitates that Indonesia align its national strategies with international frameworks and cooperation mechanisms.

Engagement with multilateral organizations and adherence to agreements such as the Paris Agreement are essential to mobilize support and share best practices for climate resilience. At the same time, domestic policy coherence and community involvement remain vital to ensure that strategies are contextually relevant and socially inclusive. This study aims to provide a

comprehensive analysis of the challenges that the climate crisis poses to Indonesia's national security and to critically evaluate the effectiveness of the country's current strategic responses. By exploring the intersection of environmental change and security concerns, the research seeks to contribute to the development of integrated policy approaches that enhance Indonesia's capacity to anticipate, prepare for, and respond to climate-related threats. Ultimately, strengthening Indonesia's resilience to the climate crisis is not only imperative for safeguarding its national security but also for ensuring sustainable development and the well-being of its people in an increasingly uncertain world.

2. METHODS

A literature review is a description of the literature relevant to a particular field or topic. (Gadjah Mada University, 2022). A literature review is a critical analysis of theories, findings, and previously published research results on a specific topic. In a literature review, researchers summarize, compare, and evaluate various relevant sources to gain a comprehensive understanding of the knowledge development in that field. Through this process, researchers can identify gaps or shortcomings in previous studies and determine the direction for future research.

A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis. A summary is a recap of the important information of the source, but a synthesis is a reorganization, or a reshuffling, of that information. It might give a new interpretation of old material or combine new with old interpretations. (University of North Carolina at Chapel Hill, n.d.). Conducting a systematic and effective literature review involves a well-organized and meticulous approach to ensure a thorough and impartial overview of existing research. It starts by clearly defining a focused research question that serves as the foundation for the review. Following this, a comprehensive review plan is created, detailing the methodology, including criteria for selecting studies, sources for literature search, and methods for data extraction and assessment. A comprehensive search is then performed across multiple relevant databases to locate all relevant studies, which are subsequently screened and selected according to established criteria. The selected studies undergo critical evaluation to assess their quality and potential biases, ensuring the credibility of the evidence. Data from these studies are then systematically collected and analyzed, either qualitatively or quantitatively through meta-analysis. The results are then synthesized and interpreted to emphasize significant

findings, uncover gaps in the literature, and explore the implications for practice and future investigations. Lastly, the entire review process is documented transparently, often adhering to guidelines such as PRISMA, to promote clarity and reproducibility. This thorough methodology guarantees that the systematic literature review is reliable, valuable, and contributes meaningfully to the progression of knowledge within the field.

3. THEORY

Climate Krisis

Climate change, which is now more strongly emphasized as the climate crisis, refers to long-term extreme changes in temperature and weather patterns. Although climate change can occur naturally, since the Industrial Revolution in the 18th century, the rate of change has accelerated significantly. This is mainly due to the massive use of fossil fuels that produce greenhouse gases (GHGs) since that time. (Gadjah Mada University, 2022). The climate crisis refers to an urgent situation caused by global warming and climate change that results in significant negative impacts on the planet and human life. This term highlights the critical and immediate threat posed by ongoing greenhouse gas emissions, necessitating swift and substantial mitigation efforts to safeguard the biosphere and prevent further damage. The climate crisis involves extreme temperature changes and weather patterns, along with phenomena such as rising sea levels, severe weather events, and loss of biodiversity, all of which directly endanger the sustainability of life on Earth.

Climate change can impact our health, food production capabilities, housing, safety, and employment. Some groups are already more vulnerable to climate effects, such as those living in small island nations and other developing countries. Issues like rising sea levels and saltwater intrusion have reached levels forcing entire communities to relocate, while prolonged droughts increase the risk of hunger. In the future, the number of "climate refugees" is expected to grow significantly. (*Ambil Aksi*, 2023). Climate change impacts human health in various direct and indirect ways. It leads to more frequent and severe extreme weather events like heat waves, storms, floods, and droughts, resulting in injuries, illnesses, and fatalities. Higher temperatures worsen heat-related conditions, aggravate respiratory and heart diseases due to declining air quality, and promote the spread of infectious diseases transmitted by vectors such as mosquitoes and ticks, including malaria and dengue. Furthermore, climate change threatens food and water availability,

causing malnutrition and increasing the likelihood of waterborne illnesses, while also affecting mental well-being through stress, anxiety, and displacement, particularly among vulnerable groups like children, the elderly, and low-income populations.

1. National Security

Modern concepts of national security arose in the 17th century during the Thirty Years War in Europe and the Civil War in England. In 1648, the Peace of Westphalia established the idea that the nation state had sovereign control not only of domestic affairs such as religion, but also of external security (Holmes, 2015, p, 5). National security refers to a set of policies and actions taken by a country to protect its safety and stability from various threats, both external and internal. It involves utilizing various resources such as military power, economic strength, diplomacy, as well as security aspects related to energy, environment, social, and cultural sectors to safeguard sovereignty, territorial integrity, and the welfare of the people. In addition to facing conventional threats like interstate conflicts, national security must also be prepared to address risks from non-state actors such as terrorism, transnational crime, and cyberattacks, requiring a comprehensive approach that involves the participation of all components of the nation.

Security is important thing for everyone. Indeed everyone in every time try to achieve security for themself in many ways of life. Likewise a state, for each country security is important thing and need to be achieved in the implementation of government. (Sundari, 2016, p, 9). National security plays a crucial role in supporting the people by ensuring safety and order, which form the foundation for the community's survival and well-being. One practical example of this role is the presence of community protection units (Linmas) that collaborate with security forces to maintain public order, address security disturbances such as riots and disasters, and assist in emergency response and community development. By maintaining stability and security, national security enables citizens to live in a safe environment where they can carry out daily activities, work, and contribute effectively to development.

4. ANALYSIS

Climate change is affecting practically everything on Earth, from natural systems to human endeavors. National security is no exception. The National Intelligence Council has found that “climate change will increasingly exacerbate risks to U.S. national security interests as the physical

impacts increase and geopolitical tensions mount about how to respond to the challenge.”- (Cho, 2023). The idea of climate change as a “threat multiplier” emphasizes how environmental shifts worsen existing security challenges instead of introducing entirely new dangers. Climate change intensifies pre-existing social, economic, and political issues such as limited resources, weak governance, and societal conflicts, which can lead to greater instability and violence. For instance, higher temperatures, droughts, and extreme weather reduce water and food availability, increasing competition and unrest in vulnerable countries already facing poverty and political turmoil.

These pressures can trigger mass displacement and provide opportunities for extremist groups to grow, posing additional risks to national and regional security. Furthermore, climate change harms vital infrastructure, including military facilities and logistics networks, weakening defense capabilities and complicating emergency responses. Recognizing these interconnected threats, security organizations like the U.S. Department of Defense have incorporated climate risk evaluations into their planning, acknowledging that climate impacts exacerbate geopolitical tensions and security problems worldwide. The term “threat multiplier,” introduced by the Center for Naval Analyses in 2007, has become a key framework for understanding the cascading effects of climate change on global stability. Ultimately, tackling climate change is essential not only for environmental protection but also for safeguarding national and international security amid growing uncertainties.

Climate change plays a significant role in driving this scarcity. As global temperatures rise, rainfall patterns shift and extreme weather events like droughts and floods become more common, all of which negatively impact the availability and quality of these vital resources. Clean water is becoming increasingly difficult to access as warmer temperatures reduce snow and glacier melt, which are crucial water sources for many regions. Unpredictable rainfall also contributes to both droughts and floods, disrupting water systems (*Climate Change 2022: Impacts, Adaptation and Vulnerability* | *Climate Change 2022: Impacts, Adaptation and Vulnerability*, n.d.). Fertile land is also under threat due to higher temperatures and extreme weather conditions that degrade soil and accelerate desertification. At the same time, food production is affected by unstable weather, shifting temperatures, and the spread of pests and diseases linked to climate change (World Bank, 2023).

This growing scarcity of essential resources can intensify competition between communities or even between countries. In areas where governance is weak or populations are already vulnerable, such pressures may lead to social unrest or conflicts over access to what little remains.

Climate change is rapidly becoming a powerful driver of human displacement around the world. As environmental conditions worsen, many people are being forced to leave their homes—not by choice, but because staying is no longer a safe or viable option. In low-lying coastal areas, rising sea levels pose a serious threat to entire communities, as higher tides and frequent flooding gradually submerge land and damage infrastructure (World Bank, 2023). In other regions, the increasing intensity of extreme weather events—such as hurricanes, cyclones, floods, and wildfires—destroys homes, roads, farms, and critical public services, making it impossible for residents to rebuild or remain in place. Meanwhile, in arid and semi-arid areas, prolonged droughts are drying up rivers, damaging crops, and killing livestock, which are often the primary sources of food and income for families. As these pressures mount, more and more people are left with no choice but to move, often in search of safety, stability, and access to basic necessities such as water, food, and shelter.

This kind of forced migration has profound social and political consequences. When large groups of displaced people arrive in new areas—whether within their own country or across borders—the receiving communities may not be prepared to handle the sudden increase in population. Local infrastructure, such as housing, healthcare, education, and sanitation systems, can quickly become overwhelmed. The competition for limited jobs, food, and water can increase tensions between newcomers and the existing population. In some cases, these tensions escalate into social unrest or conflict, especially in communities that are already experiencing economic hardship or political instability (University of North Carolina at Chapel Hill, n.d.). Governments may struggle to maintain order, and border control systems may be pushed to their limits. Furthermore, the challenges of social integration—such as differences in language, culture, and religion—can lead to division and mistrust, making long-term peace and cooperation more difficult to achieve.

Beyond the direct consequences of displacement, the instability created by environmental degradation and resource shortages can open the door for extremist groups to gain influence. In areas where government institutions are weak or under-resourced, people who have lost their

homes, livelihoods, or families may feel abandoned and hopeless. Extremist groups often exploit this sense of injustice and despair by offering support, protection, or a sense of belonging to those in need. They may frame themselves as defenders of the marginalized or as alternatives to corrupt or ineffective authorities. In some cases, they provide basic services—such as food distribution, education, or security—filling gaps left by failing states. By taking advantage of grievances linked to climate-induced hardships, such groups are able to recruit followers, spread their ideologies, and increase their power. Over time, this can lead to greater instability, rising violence, and heightened security threats—not just at the local level, but also at the national and regional scales (*Climate Change 2022: Impacts, Adaptation and Vulnerability* | *Climate Change 2022: Impacts, Adaptation and Vulnerability*, n.d.).

The environmental impacts of climate change are not only ecological or economic in nature—they are deeply connected to human displacement, social cohesion, and security (Ministry of National Development Planning/Bappenas, 2021). Forced migration caused by environmental stress can overwhelm communities and trigger humanitarian crises, while the social disruption that follows creates opportunities for extremist groups to thrive. As climate pressures intensify in the years ahead, addressing these interconnected challenges will require coordinated global action that combines environmental resilience with strong social and political systems.

As climate change continues to accelerate, the vulnerability of critical infrastructure to extreme weather events becomes a major concern for national security. Facilities such as military bases, communication networks, transportation systems, and supply chains are increasingly at risk of damage or disruption from floods, hurricanes, wildfires, and rising sea levels. Coastal military installations, in particular, face significant threats from flooding and storm surges, which can damage essential facilities and equipment, disrupt training activities, and hinder logistical operations (UNDRR, n.d.). Meanwhile, regions further inland are not immune; they face threats from heat waves and wildfires that can destroy power lines, interrupt communication systems, and block critical transportation routes. When such infrastructure is damaged or disabled, it can severely reduce the military's ability to operate effectively, delay the delivery of vital supplies such as fuel, food, and medical equipment, and slow down response efforts during emergencies or natural disasters.

The impact of these disruptions extends beyond physical damage. Communication breakdowns caused by infrastructure failure can complicate coordination between military units, emergency responders, and civilian agencies, making disaster response efforts less effective and more chaotic. Transportation challenges can prevent timely evacuations and hinder the distribution of aid, potentially exacerbating humanitarian crises (United State Department of Defence, n.d.). These compounding issues increase the nation's overall vulnerability to both natural disasters and security threats, weakening its capacity to maintain order and protect its citizens.

To confront these growing risks, national security strategies must evolve to incorporate comprehensive climate risk assessments and adopt forward-looking adaptation measures. This approach involves identifying weaknesses within critical infrastructure and developing plans to strengthen and safeguard these assets against future climate impacts (World Bank, 2023). It requires preparing military and civilian agencies alike to operate under increasingly unpredictable and harsh environmental conditions. For instance, efforts may include redesigning military bases to withstand flooding, enhancing the resilience of supply chains by diversifying routes and sources, and upgrading communication networks to ensure they remain functional during crises. Additionally, incorporating sustainability and energy efficiency into defense planning helps reduce dependence on vulnerable resources and enhances operational flexibility.

By proactively addressing climate-related risks through strategic adaptation, nations can bolster their resilience, ensuring that essential infrastructure remains operational even in the face of severe weather events (Ministry of National Development Planning/Bappenas, 2021, #). This not only preserves military readiness but also improves the effectiveness of disaster response and helps maintain social stability during times of crisis. In essence, adapting to climate change within the context of national security is vital for protecting both the physical assets that underpin defense capabilities and the broader well-being of society in an era marked by increasing environmental uncertainty.

Climate change is emerging as a significant force reshaping global geopolitical dynamics. As environmental conditions continue to evolve, they are altering the distribution and accessibility of vital natural resources such as freshwater, arable land, and energy reserves (*Ambil Aksi*, 2023). These changes are not occurring in isolation but are having direct implications for power structures, international competition, and regional stability. For example, the accelerated melting of polar ice in the Arctic is unveiling previously inaccessible maritime routes and exposing

valuable natural resources such as oil, gas, and rare minerals. As a result, several nations are increasingly asserting territorial claims and military presence in the Arctic region, intensifying geopolitical rivalry in what was once considered a relatively neutral zone.

Additionally, shifts in climate patterns are severely impacting agriculture and water availability in many regions, particularly in the Global South. This has led to a rise in cross-border migration, as communities are forced to leave areas that can no longer sustain their livelihoods due to drought, desertification, or sea level rise. The large-scale movement of people can put considerable strain on neighboring countries' resources and infrastructure, potentially sparking social unrest, economic instability, and diplomatic friction. In some cases, this can escalate into conflict, particularly in regions that are already politically fragile. Furthermore, countries that depend heavily on climate-sensitive sectors, such as agriculture and tourism, are seeing their economies destabilized, which may reduce their influence on the global stage and make them more vulnerable to foreign pressure or intervention. Altogether, these complex, climate-driven transformations are contributing to a shifting geopolitical landscape in which environmental stressors act as catalysts for tension, competition, and, in some instances, conflict (Cho, 2023)

Given the growing security implications of climate change, it is essential for governments and international institutions to adopt a dual approach that includes both mitigation and adaptation strategies (*Climate Change 2022: Impacts, Adaptation and Vulnerability* | *Climate Change 2022: Impacts, Adaptation and Vulnerability*, n.d.). Mitigation refers to efforts aimed at addressing the root causes of climate change by reducing greenhouse gas emissions and transitioning toward sustainable, low-carbon development. This can be achieved through various means, including the expansion of renewable energy infrastructure, the promotion of energy-efficient technologies, sustainable transportation systems, and the protection and restoration of forests and other carbon sinks. Mitigation efforts are crucial to slowing the pace of climate change and minimizing the severity of future environmental disruptions.

At the same time, adaptation involves preparing for the effects of climate change that are already occurring or anticipated in the near future (*Climate Change 2022: Impacts, Adaptation and Vulnerability* | *Climate Change 2022: Impacts, Adaptation and Vulnerability*, n.d.). This includes developing resilient infrastructure that can withstand extreme weather events, investing in climate-smart agriculture to safeguard food security, strengthening public health systems to handle climate-related diseases, and designing urban spaces that can absorb and recover from

environmental shocks. Adaptation is particularly critical in regions that are already facing the brunt of climate impacts, as it enhances their ability to maintain social stability, economic productivity, and political order under stress.

Both mitigation and adaptation are not just environmental necessities—they are fundamental components of national and international security planning. Climate-induced disruptions have the potential to trigger conflict, displace millions, and undermine global governance structures. By taking proactive steps to address these risks, states can reduce vulnerability, protect critical infrastructure, and build more resilient societies. Conversely, failure to act increases the probability of widespread instability, humanitarian crises, and conflict over scarce resources. Therefore, integrating climate action into national security agendas is no longer optional but essential for preserving peace, security, and international cooperation in an increasingly climate-affected world (Gadjah Mada University, 2022).

5. CONCLUSION

The climate crisis presents a multidimensional threat to Indonesia's national security, affecting not only environmental stability but also economic resilience, social cohesion, and geopolitical positioning. The country's vulnerability to sea level rise, extreme weather events, and resource scarcity has the potential to exacerbate internal displacement, disrupt food and water security, and strain institutional capacities. These risks, if left unaddressed, may contribute to regional instability, migration pressures, and the erosion of state authority in critical areas. Therefore, it is imperative that Indonesia adopts a comprehensive security framework that integrates climate risk assessments, strengthens climate adaptation and mitigation strategies, and fosters cross-sectoral collaboration between civilian, military, and regional partners. Recognizing climate change as a core national security issue will enable Indonesia to enhance its resilience, safeguard its development goals, and contribute to broader regional stability in the face of an escalating global climate emergency.

6. ACKNOWLEDGEMENT

The author is grateful that with the grace of God Almighty we were able to complete this journal, the author is also grateful to the parents who have helped encourage and provide motivation and to colleagues who have helped the author during the process of writing this journal.

We have succeeded in writing a maritime journal by following the assignment procedures given by lecturer Agussalim Burhanuddin S, IP MIRAP. We are very grateful to our colleagues and the author apologizes if there is any language that is not acceptable.

REFERENCES

- Ambil Aksi. (2023, May 17). Apa itu perubahan iklim? United Nations Indonesia. <https://indonesia.un.org/id/172909-apa-itu-perubahan-iklim>
- Cho, R. (2023, October 11). Why climate change is a national security risk. State of the Planet. <https://news.climate.columbia.edu/2023/10/11/why-climate-change-is-a-national-security-risk/>
- Climate Change 2022: Impacts, adaptation and vulnerability | Climate Change 2022: Impacts, adaptation and vulnerability. (n.d.). IPCC. Retrieved May 12, 2025, from <https://www.ipcc.ch/report/ar6/wg2/>
- Climate Change 2022: Impacts, adaptation and vulnerability | Climate Change 2022: Impacts, adaptation and vulnerability. (n.d.). IPCC. Retrieved May 29, 2025, from <https://www.ipcc.ch/report/ar6/wg2/>
- Gadjah Mada University. (2022, June 8). Literature review. Subject Guide. <https://kit.ft.ugm.ac.id/sp/subjects/guide.php?subject=lr>
- Gadjah Mada University. (2022, November 7). Kenapa krisis iklim dapat menyebabkan inflasi pangan? Pusat Studi Lingkungan Hidup UGM. <https://pslh.ugm.ac.id/kenapa-krisis-iklim-dapat-menyebabkan-inflasi-pangan/>
- Holmes, K. R. (2015, November 6). What is national security? The Heritage Foundation, 2(1), 5–7.
- Ministry of Environment and Forestry. (2023). Indonesia's climate actions towards 2030 (1st ed.). The Ministry of Environment and Forestry of the Republic of Indonesia.
- Ministry of National Development Planning/Bappenas. (2021). Climate resilience development policy 2020–2045 (1st ed.). Ministry of National Development Planning/Bappenas.
- Sundari, F. (2016, April 21). Sistem pertahanan dan keamanan negara dalam konsep rancangan undang-undang keamanan nasional. Jurnal Keamanan Nasional, 1(1), 9.
- UNDRR. (n.d.). UNDRR – Homepage. <https://www.undrr.org>
- United Nations. (2021, June 21). Research report: The UN Security Council and climate change. United Nations, 2(2), 15–18.
- United States Department of Defense. (n.d.). U.S. Department of Defense. <https://www.defense.gov>
- University of North Carolina at Chapel Hill. (n.d.). Literature reviews – The Writing Center. UNC Writing Center. <https://writingcenter.unc.edu/tips-and-tools/literature-reviews/>
- World Bank. (2023, August 21). Indonesia - Country climate and development report. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099042823064027780/p17724501e40e50940a6ae035cd74193a44>