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91429R

Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 3 Geography 2025

91429 Demonstrate understanding of a given environment(s) through selection and application of geographic concepts and skills

Credits: Four

RESOURCE BOOKLET

Refer to this booklet to answer the questions for Geography 91429.

Check that this booklet has pages 2–15 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.

Relevant geographic concepts

Environments
May be natural and / or cultural. They have particular characteristics and features, which can be the result of natural and / or cultural processes. The particular characteristics of an environment may be similar to and / or different from another. A cultural environment includes people and / or the built environment.

Perspectives
Ways of seeing the world that help explain differences in decisions about, responses to, and interactions with environments. Perspectives are bodies of thought, theories, or world views that shape people's values and have built up over time. They involve people's *perceptions* (how they view and interpret environments) and *viewpoints* (what they think) about geographic issues. Perceptions and viewpoints are influenced by people's *values* (deeply held beliefs about what is important or desirable).

Processes
A sequence of actions, natural and / or cultural, that shape and change environments, places, and societies. Examples of geographic processes include erosion, migration, desertification, and globalisation.

Patterns
May be spatial (the arrangement of features on the Earth's surface) or temporal (how characteristics differ over time in recognisable ways).

Interaction
Involves elements of an environment affecting each other and being linked together. Interaction incorporates movement, flows, connections, links, and interrelationships, which work together and may be one- or two-way interactions. Landscapes are the visible outcome of interactions. Interaction can bring about environmental change.

Change
Involves any alteration to the natural or cultural environment. Change can be spatial and / or temporal. Change is a normal process in both natural and cultural environments. It occurs at varying rates, at different times, and in different places. Some changes are predictable, recurrent, or cyclic, while others are unpredictable or erratic. Change can bring about further change.

Sustainability
Involves adopting ways of thinking and behaving that allow individuals, groups, and societies to meet their needs and aspirations without preventing future generations from meeting theirs. Sustainable interaction with the environment may be achieved by preventing, limiting, minimising, or correcting environmental damage to water, air, and soil, as well as considering ecosystems and problems related to waste, noise, and visual pollution.

RELOCATION OF INDONESIA'S CAPITAL CITY

RESOURCE A: An introduction to Indonesia

Indonesia is located in Southeast Asia. It is the world's largest single-state archipelago (group of islands), spanning a distance equivalent to one-eighth of the world's circumference.

Indonesia is made up of over 17,000 islands, of which 6,000 are said to be inhabited. The topography is diverse and complex, with volcanic activity, mountain ranges, extensive lowlands, and diverse coastal features, making it one of the most geographically varied countries in the world.

Jakarta, the current capital of Indonesia, has a tropical climate, characterised by high temperatures and high humidity throughout the year. However, Jakarta faces a combination of social, economic, and environmental challenges that have influenced a change in Indonesia's capital's location. The decision to move the capital is a massive undertaking involving significant investment and planning. Nusantara (located on the island of Borneo), the planned new capital, is being designed with sustainability and modern infrastructure in mind, aiming to address many of the issues that Jakarta currently faces.

Figure 1: Location of Indonesia. The planned new capital, Nusantara, on the island of Borneo, is marked in yellow.

RESOURCE B: An introduction to Borneo

Borneo is the world's third largest island and is divided amongst three countries: Indonesia, Brunei, and Malaysia. Indonesia constitutes the largest political component of the island (in Indonesian, Borneo is known as Kalimantan). The island's equatorial position ensures that temperatures do not vary significantly between seasons. Borneo experiences significantly high levels of humidity all year round.

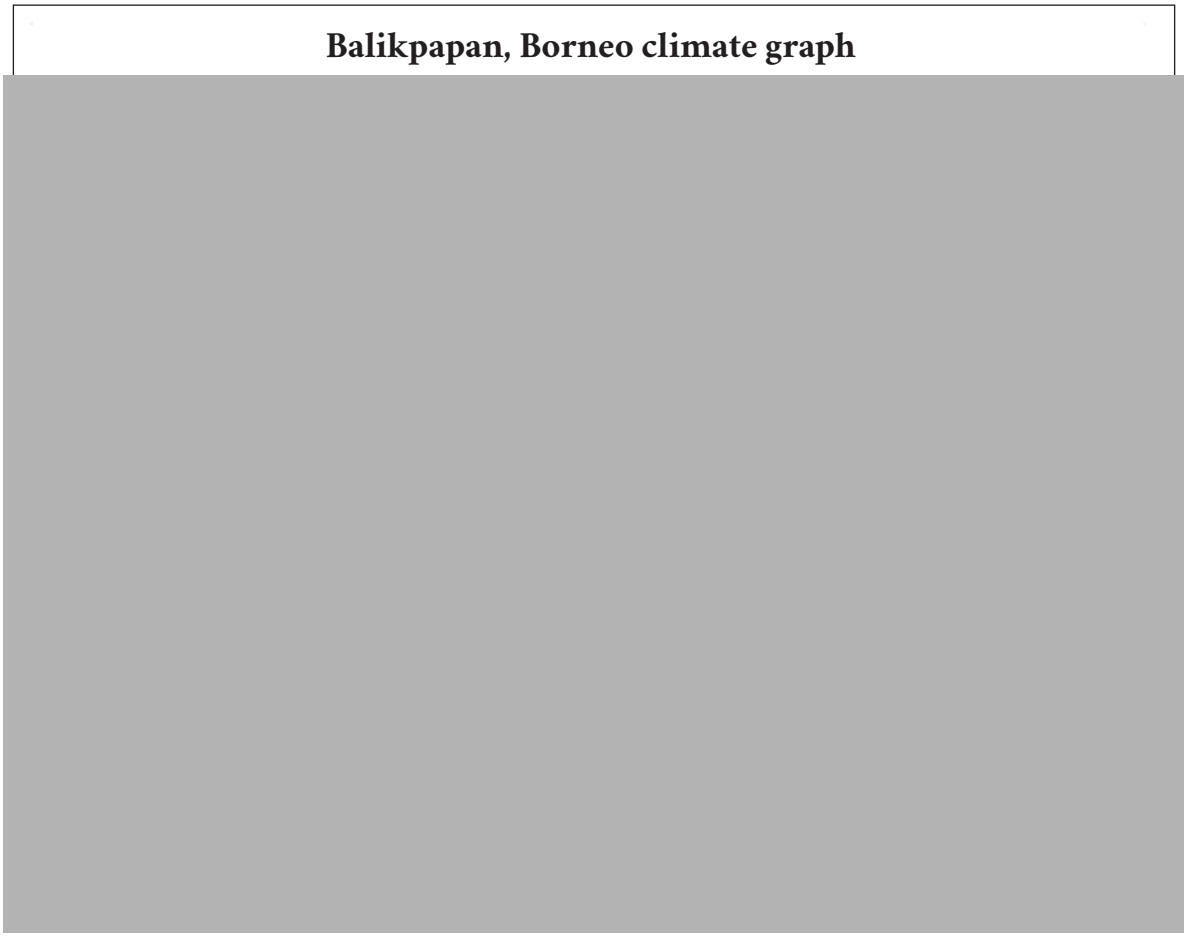

Figure 2: Temperature and rainfall in Balikpapan, Borneo.

RESOURCE C: Topography (relief) of Borneo

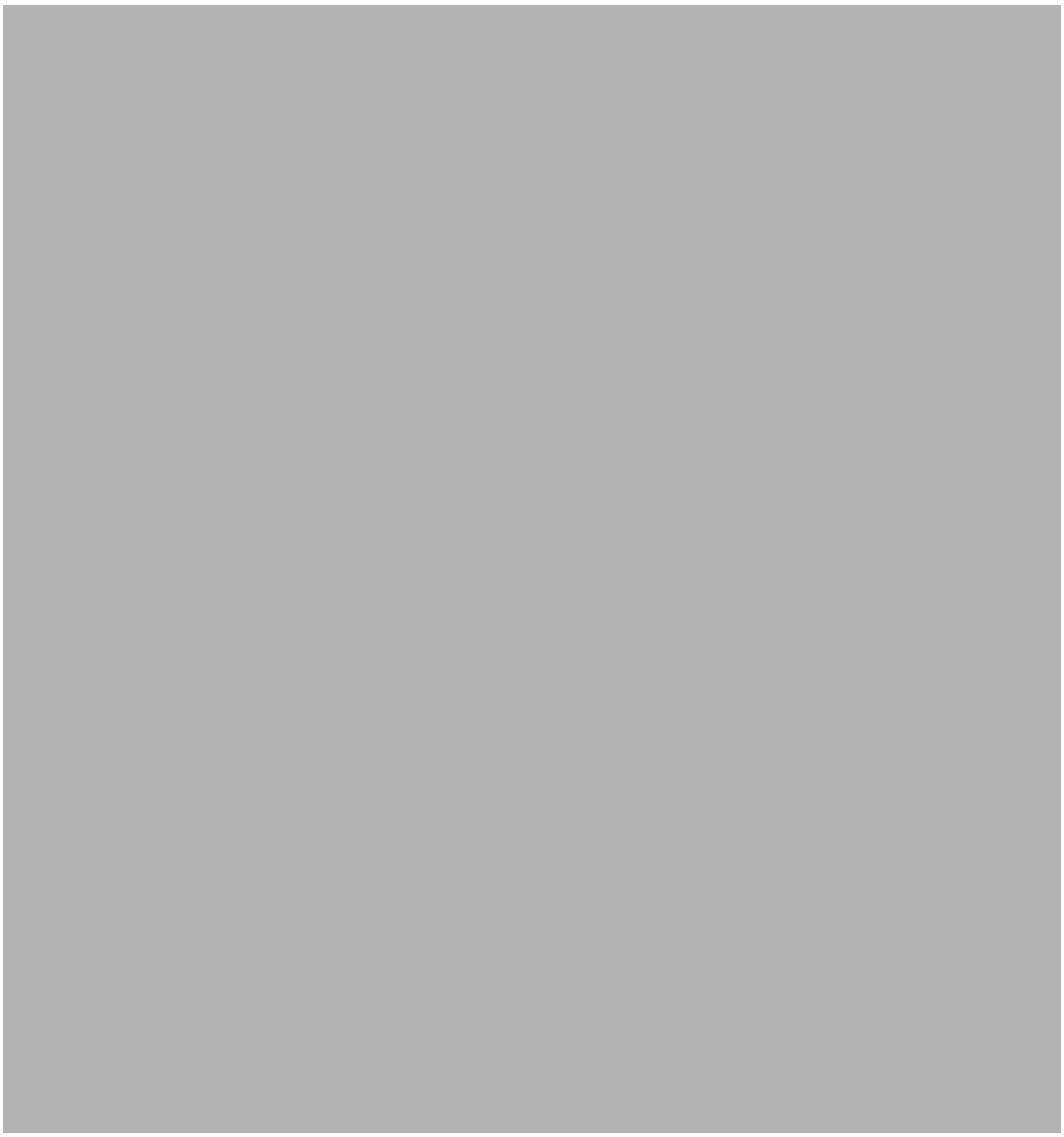

Figure 3: The topography of Borneo, and location of Nusantara.

RESOURCE D: Biodiversity in Borneo

The Heart of Borneo is a 220,000 km^2 region in the mountainous centre of the island. In this area alone, there are 10 primate species, over 350 bird species, and 150 reptile and amphibian species.

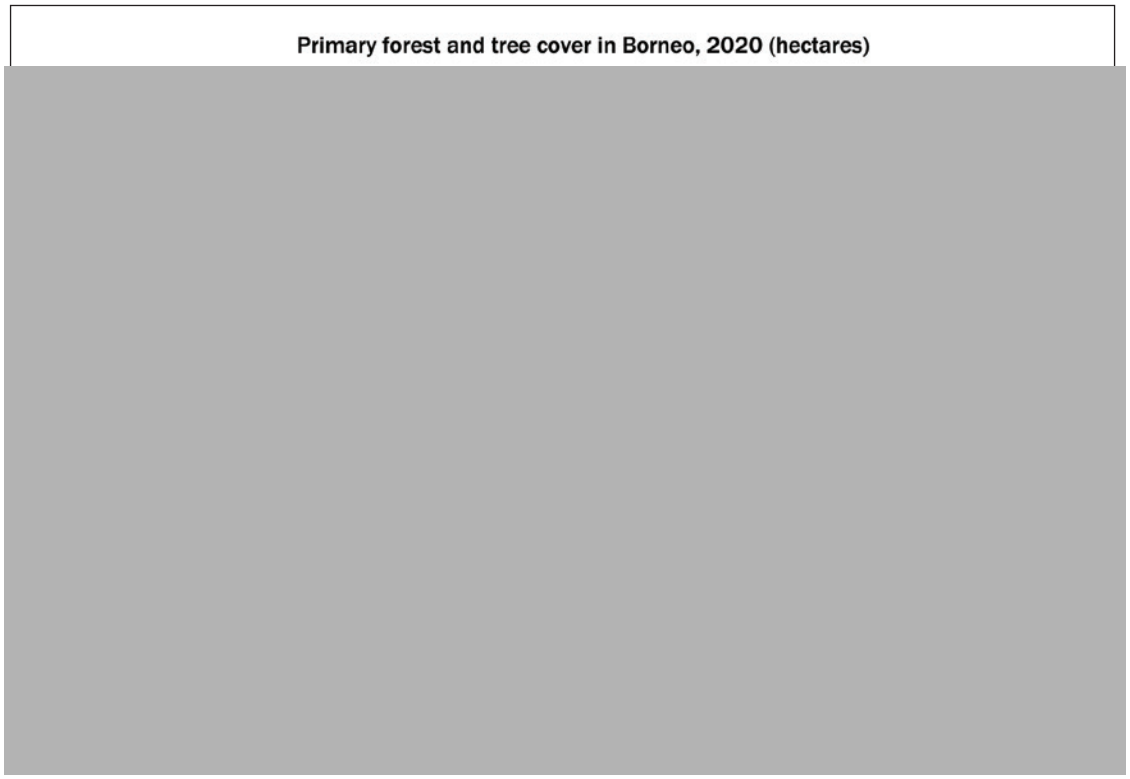

Figure 4: Primary forest and tree cover, Borneo. Primary forest cover refers to areas of naturally regenerating native trees with no clear signs of human disturbance.

Figure 5: Orangutans in Borneo.

The geographic isolation of Borneo and its forests has led to a unique and rich diversity of species from both Asian and Australasian lineages, making Borneo's montane habitats some of the most biodiverse areas on the planet.

RESOURCE E: Jakarta's geography

Jakarta is positioned on the northwestern coast of Java Island, facing the Java Sea. This coastal location makes it an important port and commercial centre for the country. Jakarta is predominantly located in a low-lying coastal plain. The city itself is situated at an elevation of approximately seven metres above sea level. This flat topography makes it prone to flooding, especially during heavy rains and high tides.

Land subsidence is one of Jakarta's major geographic issues. The city is sinking at a rate of about 1 to 15 centimetres per year in some areas, largely due to excessive groundwater extraction and the heavy weight of urban development. This problem increases the impact of flooding.

Population density (per km^2) and relief (elevation) of Jakarta, Indonesia (2010)

Figure 6: Population density (left) and elevation (right) of Jakarta.

RESOURCE F: Subsidence and sea level rise in Jakarta

Subsidence can occur due to a variety of natural and cultural processes. Soil compaction, breaking down of bedrock, and earthquakes are some natural processes that cause subsidence. All of which are sped up by human actions such as mining, oil and gas extraction, over-extraction of groundwater, buildings and infrastructure putting pressure onto soils (which leads to soil compaction), and draining of wetlands. These factors have all contributed to Jakarta "sinking" at a rapid rate throughout the nineteenth and twentieth centuries.

In combination with high levels of subsidence, Jakarta is experiencing sea level rise. These issues, amongst other social factors, have led to the Government's suggestion to shift the economic centre of Jakarta to a less vulnerable location; one that is not overcrowded or more at risk of destruction in years to come. Jakarta is also preparing a new and improved "Sea Defence Wall Master Plan" to replace current sea walls that are no longer serving their intended purpose. These will be constructed to protect northern Jakarta from inundation (flooding) caused by increase in sea level and land subsidence.

Figure 7: Sea level rise projections by 2100 for two scenarios, with the amount of rise in metres indicated (mild = 3 m; extreme = 5 m). Percentage and total population displacement are indicated at bottom right.

RESOURCE G: Nusantara – a planned, sustainable new capital city

The Indonesian Government has been vocal in its plans to make Nusantara a sustainable city, including reserving 60% of the new capital as green areas. However, conservationists have questioned the country's ability to follow through on its green ambitions, given its track record of environmental degradation.

[redacted]

Mr Susantono revealed that the Government is in the middle of discussions to sign a memorandum of understanding with the World Wildlife Fund, "to put more weight on our ESG goals and increase its credibility for better ease of access to potential financial sources around the world."

Figure 8: The Environment, Social, and Governance (ESG) model.

RESOURCE H: Nusantara's economy

Nusantara, the planned capital city of Indonesia, is expected to have significant economic impacts both locally and nationally. The move to Nusantara is expected to attract substantial investment in infrastructure, including transportation, utilities, and housing.

The decades-long project covering hundreds of square kilometres will cost about USD35 billion, according to estimates by the administration. This development can create jobs and stimulate economic activity in the region. By relocating the capital from Jakarta to Nusantara, the Government aims to promote more balanced economic growth across the archipelago, reducing the overconcentration of resources and opportunities in Jakarta.

Nusantara is positioned to become a new tourist destination, which could lead to increased tourism-related revenues and job creation in hospitality and services. The establishment of a new capital presents opportunities for businesses in construction, real estate, technology, and various services, fostering entrepreneurship and innovation.

Indonesian capital city relocation and regional economy's transition towards a less carbon-intensive economy

Figure 9: A simulation of the effects moving the capital to East Kalimantan province may have on the region's economy.

RESOURCE I: Nusantara satellite images showing construction

Indonesia intended to move its state palace and parliament building to the new capital city at the end of 2024, and all construction of the city to be completed by 2045. Judging by the satellite imagery, there is still a long way to go before Nusantara becomes the "smart, green, beautiful and sustainable" capital city it dreams to be.

Figure 10: Above – satellite image of the future site of Nusantara, April 2022. Below – roads and hints of infrastructure emerge, February 2024.

RESOURCE J: Perspectives on moving the capital to Nusantara

The Indonesian public

In 2020, 53% of Indonesian citizens surveyed stated that they "quite" or "strongly" agreed with the plan to move the capital, but this support declined slightly to 48.5% in 2022.

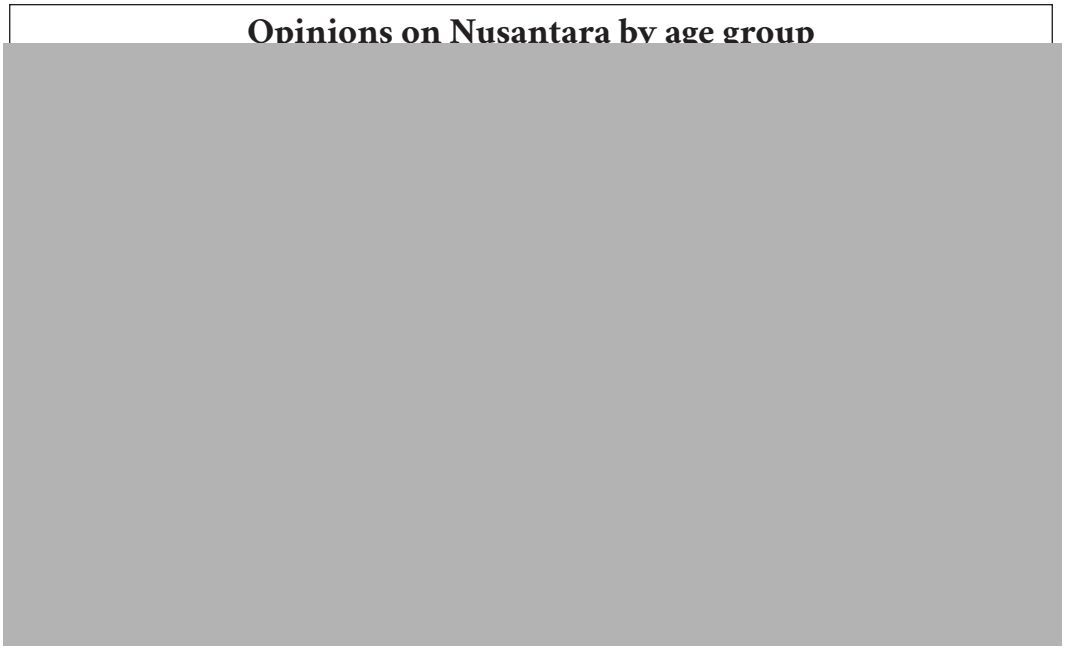

Figure 11: Public attitudes towards moving the capital to Nusantara, 2022.

The Indigenous Peoples' Alliance of Nusantara (AMAN)

The Indigenous Peoples' Alliance of Nusantara (AMAN) estimates that at least 20,000 Indigenous people will be relocated as construction on Nusantara progresses.

"Indigenous people's land ownership is not considered to have strong legality, if there is no certificate. So, they are considered to be staying on land they don't own," Arman said. "The inheritance of land in Indigenous communities is not seen as legal."

Sernai, East Kalimantan resident

Sernai, 68, lives in a wooden house that once belonged to her great-great-grandparents.

This is where she has lived her whole life. But her village is no longer the quiet place she associates with her childhood.

Figure 12: Sernai outside her home.

"We used to plant coconuts and plums. There were rows of trees, and they are all gone now. We had all kinds of fruits that we could sell at the market, like mango. Now, there is nothing we can sell," she said. "We used to live good lives, we never had to buy things like wood, water, or vegetables. Now, we live miserable lives," Sernai said.

Bambang Susantono – Nusantara Capital Authority head

Figure 13: Bambang Susantono.

Nusantara is intended to relieve some of the environmental pressures facing the current capital Jakarta, which, apart from being polluted and congested, is the world's fastest-sinking city.

We would like to have both – liveable and loveable goes hand-in-hand. So that Nusantara will be one of the best sustainable forest cities in the world."

Balik Tribe, Kalimantan

Sibukdin, leader of the Indigenous Balik tribe, explained that one of the planned construction zones for the new capital runs through his tribe's cemetery in their village located near the site of the new capital, in East Kalimantan province.

Figure 14: Sibukdin in his tribe's cemetery.

They also asked for the Indonesian Government to focus on Indigenous people, arguing it was irresponsible for groups to lobby the Government and make decisions on behalf of Indigenous people without consulting with the different groups.

Acknowledgements
Material from the following sources has been adapted for use in this assessment:

Figure 1
https://www.nationsonline.org/oneworld/map/indonesia_map.htm

Figure 2
https://www.climate.top/graphs/balikpapan-climate-graph.png

Figure 3
https://unepgrid.ch/en/resource/2566705

Figure 4
https://mongabay-images.s3.amazonaws.com/rainforests/charts/borneo-primary-forest-borneo-extent.jpg

Resource D text and Figure 5
https://wwf.panda.org/discover/knowledge_hub/where_we_work/borneo_forests/about_borneo_forests/borneo_animals/

Resource E
https://www.bbc.com/news/world-asia-44636934

Figure 6
https://en.m.wikipedia.org/wiki/File:Urban-Rural_Population_and_Land_Area_Estimates,_v2,_2010_Jakarta,_Indonesia_(13873745385).jpg

Resource F
https://www.c40.org/case-studies/c40-good-practice-guides-jakarta-coastal-defence-strategy-and-flood-mapping/

Figure 7
https://earth.org/wp-content/uploads/2020/06/jakarta-3.jpg

Resource G
https://www.pwc.com/id/en/media-centre/pwc-in-news/2023/english/indonesias-new-capital-winks-to-foreign-investors.html

Figure 8
https://assets-us-01.kc-usercontent.com/fa776f1a-4d27-4a6b-ae1c-2ce928f9647d/c773f9b5-c212-44e8-90e8-f02b902b1e7b/ESG%20diagram.png

Figure 9
https://ars.els-cdn.com/content/image/1-s2.0-S0922142523000385-ga1_lrg.jpg

Figure 10
https://www.iflscience.com/before-and-after-satellite-images-show-indonesias-new-capital-city-emerge-from-jungle-73120

Figure 11
https://fulcrum.sg/analysing-public-opinion-on-moving-indonesias-capital-demographic-and-attitudinal-trends/#:~:text=In%202020%2C%2053%20per%20cent,increased%20to%2044%20per%20cent

Figure 12 and text
https://www.aljazeera.com/news/2023/3/15/like-we-dont-exist-indigenous-fear-indonesia-new-capital-plan

Figure 13
https://upload.wikimedia.org/wikipedia/commons/8/88/Bambang_Susantono_official_portrait.png. Public domain.
Text: https://www.aljazeera.com/news/2023/3/7/qa-indonesia-new-capital-chief-bambang-susantono

Figure 14 and text
https://nit.com.au/15-04-2023/5609/balik-indigenous-people-fear-impact-of-planned-indonesian-city