

Chapter 6

Climate Change and Sustainable Development of Kampong Ayer: Its History, People, and Environment

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ABSTRACT

Brunei Darussalam is committed to the Sustainable Development Goals. This study focuses on future sustainability of Kampong Ayer, largely a settlement as a consequence of land-based development. Many that remain are in the low-income group due to the lack of economic opportunities. They have become dependent on government welfare programmes. The cost of frequent home repairs due to environmental factors has become a burden in the modern world. Although the people have a close relationship with the estuary, and are highly adaptive, climate change is a slow and imperceptible process and will therefore catch the people off-guard. This study argues that intervention is needed. A policy based on SDGs 1, 11, and 13 would be most appropriate, as they address the most pressing issues in KA: poverty, sustainable cities and communities, and climate adaptation.

1. INTRODUCTION: BRIEF CHAPTER STRUCTURE

At the Earth Summit in Rio de Janeiro in 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was opened for signatures. It entered into force in 1994, establishing a framework for international cooperation on climate change, a platform for countries to negotiate and develop strategies to reduce greenhouse gas emissions and adapt to the impacts of climate change. The convention also established a governing body, the Conference of the Parties (COP) to drive and monitor international efforts to stabilise anthropogenic greenhouse gas concentrations in the atmosphere via the Kyoto Protocol

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in 1997 and the Paris Agreement in 2015. The latter, adopted in COP 21 aims to hold global average temperature from rising to 2°C above ‘pre-industrial’ (1850-1900) levels. Participating country’s efforts are tracked through ‘nationally determined contributions’ (NDCs), which comprised of (i) “mitigation” (reducing greenhouse gas, primarily CO₂, emissions) and (ii) “adaptation” measures (building resilience to climate impacts).

Prior to COP 21, the United Nations (UN) adopted the 2030 Agenda for Sustainable Development on 25 September 2015. It is an outcome of Rio + 20 on the “Future We Want”¹. This shared blueprint for “peace and prosperity for people and the planet”² is guided by 17 interconnected Sustainable Development Goals (SDG). The Paris Agreement and SDG goals are complementary and mutually reinforcing frameworks that address different aspects of sustainable development and climate change, which is addressed specifically in SDG 13³. Brunei Darussalam (for brevity, “Brunei”) is a signatory of Agenda 21 at the Earth Summit, and together with ASEAN adopted a number of agreements and programmes on various aspects of sustainable development. In 2007, Brunei embarked on a long-term plan, *Wawasan* (‘Vision’) 2035⁴ to achieve a highly educated citizenry (Goal 1), high quality of life and sustainable environment (Goal 2), and a vibrant and stable economy (Goal 3). In 2010, it established a national council on climate change, and a national secretariat in 2018. It has adopted a ‘whole nation’ approach to combating climate change⁵.

Against this background, the Chapter will examine the evolution of Kampong Ayer (KA) and its resiliency to climate change. KA was once the primary city of the Brunei Sultanate. The arrival of the British, Second World War, modernisation, discovery of oil and gas, and migration of people and economy to land, reduced it to merely another settlement, quite bereft of economy. KA is a mix-mesh of built structure, where modern housing projects are juxtaposed with dilapidated old wooden dwellings and interspersed with houses and business premises refurbished with the latest building materials. In terms of style, the built environment has retained an eclectic mix of traditional and modern facades that is uniquely Bruneian. KA was a city, and due to its densely-packed and clustered organisation of dwellings, wards (*Kampong*) and ‘blocks’ (*mukim*), it is essentially an urban area, and one that is facing a number of sustainability concerns. SDG 11 on making cities and human settlements inclusive, safe, resilient and sustainable will therefore be used in the analysis of KA with respect to sustainable development and climate resiliency.

Since 2018, the authors and collaborators have been conducting research on KA, its history, people, culture, and evolution. This Chapter draws from earlier findings and examines sustainability concerns in the foreseeable future against a warming climate and rising sea. Published works include studies on cultural traits (Noor Hasharina Hassan and Yong, 2019a; Yong, 2021), housing and migration to land (Noor Hasharina Hassan and Yong, 2019b; Nurul Hazirah Zainuddin, 2021; Noor Hasharina Hassan, 2023), heritage industry and conservation (Izni Azrein Noor Azrein & Yong, 2022), trade and riverine lifelines (Yong, Izni Azrein Noor Azalie & Noor Hasharina Hassan, forthcoming), evolution of the physical environment (Yong and Noor Hasharina Hassan, 2022), as well as poverty in KA (Noor Hasharina Hassan et al., 2022). A number of papers are in preparation or under review at the time of writing.

In this chapter we will describe the characteristics of Brunei’s climate and explain how it is changing and would affect KA. It will then elaborate on the people and culture, their close relationship with the environment, and how modernisation has caused people, culture, economy and built environment to change over time. The vulnerability of pockets of people in KA is then elucidated, as well as the resiliency of the people in general. The Chapter then discusses the exposure of KA to anticipated climate and

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