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Paradise threatened: A look at Seychelles in the Anthropocene era

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Abstract: In his 2016 book *Overheating*, Thomas Hylland Eriksen discusses the problematics of high-speed change in a world that is fast becoming too intense, too full, too fast, and most importantly, too unequally dominated by humans. In our recent past, change and modernity have been seen as synonymous with progress; but progress, Eriksen warns, has turned out to be a double-edged sword. Stemming from Eriksen's discussion of overcrowding, high-speed mobility, and the consequential energy and waste management issues, this paper narrows down on the complexities of progress in the small island state of Seychelles. It discusses the impact of the Anthropocene era on the archipelago and its own contribution to that impact, through a review of literature and existing data on indicators of human activity such as tourism, energy, waste, consumerism, and pollution. Since Seychelles has often been synonymized with Paradise, which suggests that its inhabitants are 'happy islanders', could this country's own high-speed 'progress' be impacting on the quality of life in Seychelles?

Keywords: Anthropocene, pollution, progress, quality of life, Seychelles

Introduction

The Seychelles archipelago is often equated with Paradise in popular imagination, especially in the tourism market (Hardy, 2019, p. 106). This is not only because of its exotic island nature, but also because its islands are considered as having a truly rare beauty, as expressed by the following piece of travel writing, cited by Hardy (2019, p. 113):

> Set like gemstones in the immense blue of the Indian Ocean, they at first appear unreal, the inspired work of a master-cartoonist who has succeeded in realizing a caricature of the perfect world… No pretty picture shall ever capture the full beauty of the isles nor shall any clever turn of phrase ensnare their soul within a net of mere words. When we have used up phrases like 'the last Paradise' to describe lesser places, what remains to do justice to the untouched wonders of these magnificent miniature worlds? (Burridge, 2014, p. 1).

Situated at latitude 4° South, and officially comprising 115 islands, the Seychelles archipelago has a total land area, inclusive of reclaimed land, of just around 470 km², but has an exclusive economic zone (EEZ) of 1,350,000 km² (Lawen et al., 2024, p. 2). The archipelago's main economic activities are both marine related, being tourism and fisheries (Benoit, 2021). In spite of being tropical, the Seychelles is situated outside the cyclone belt (Chang-Seng and Guillande, 2008, p. 15). This, and the fact that the islands do not host any dangerous animal species, adds to their paradisiacal qualities (Larue, 2023).

However, even if Seychelles is marketed as a top destination for island getaways and caters for the high-end market (Choppy, 2022, p. 204), 'Paradise', as Hardy (2019, p. 106) so rightly points out, comes at a high price, if it can be bought at all. And, once lost, it is unlikely

to be regained. Seychelles' main attraction is the exclusivity provided by its isolation and apparently pristine environment, which also enable it to be high-end. In the current advanced state of the Anthropocene era, how feasible is it for this archipelago to retain its paradisiacal qualities? In 2015, the World Bank classified Seychelles as a high-income country, which then President James Michel attributed to the economic reforms undertaken since 2008, economic diversification, and the growth of investment in tourism (Seychelles Nation, 2015). President Michel also expressed some caution regarding how this classification could affect Seychelles' Small Island Developing State (SIDS) concerns, and rightly so. High Income or not, Seychelles remains vulnerable to the impact of the Anthropocene, both from exogenous and endogenous sources. Its new status as a high-income country also signals its accelerated growth, which means a chain reaction of increased consumerism, increased waste disposal issues, and higher risks of pollution. Through a discussion of existing literature and recent available data, this paper looks at how, as a SIDS, Seychelles is being impacted by the effects of the Anthropocene, and the extent to which it is itself contributing to this phenomenon. In a nutshell, should the 'happy islanders' living in the 'Garden of Eden' be conscious of a hovering menace?

Defining the Anthropocene

'The Anthropocene' was a term coined in 2000 by natural scientists Paul Crutzen and Eugene Stoermer to describe the current geological age whereby there is not one corner of the Earth, however remote and unpopulated, that has not been affected by human activity (Steffen et al., 2007). Researchers have placed the start of this geological era in the 1950s, with the accelerated growth of urban populations, vastly increased GDPs and international tourism, leading to the extreme exploitation of resources and the gradual degradation of the biosphere (Steffen et al., 2011; Bierman et al., 2016; Larjosto, 2018, p. 4). Thomas Hylland Eriksen does an excellent job of discussing the impact of the Anthropocene in his book, *Overheating: An anthropology of accelerated change* (2016).

Accelerated change, progress and overheating

Eriksen's preface defines the Anthropocene as the world being "too full, too intense, too fast, too hot, too unequal, too neoliberal, too strongly dominated by humans…" In other words, humans are responsible for the overcrowding, speed and intensity, neoliberalism and inequality that characterise the modern world. Whilst economic growth and modernisation have been hailed as progress by economists and development enthusiasts, Eriksen (2016, pp. 17-18) points out that the term 'Anthropocene' is "rarely used jubilantly; it is a wagging finger and a warning sign". Humans have over-achieved in that they have modified their environment to suit their needs, but these modifications and accelerated pace of change have unintended consequences which contradict the notion of progress. For example, the invention of vehicles may have revolutionised mobility, but it has caused pollution. DDT was meant to deal with pests affecting crops: a sign of scientific progress which was to positively affect production. However, it turned into a horror story where the eco-system was devasted (Eriksen, 2016, p. viii). The core concepts of Eriksen's book include "runaway processes and treadmill competition": it suggests that, in their quest to ensure their dominance, humans have caused the opposite effect of endangering the planet (Eriksen, 2016, p. x).

Let us take overcrowding, for example. From the year 1050 to around 1850, a graph of the world population growth could be illustrated as sloping gently upwards across one single scale, to one billion. That's eight centuries. Between 1850 to around 1925, in just about three quarters of a century, it goes up two scales, from one billion to two billion. From 1950 onwards, it just peaks crazily upwards, reaching seven billion in the first quarter of the 21st century, and is expected to reach ten million by 2050 (Eriksen, 2016, pp. 1-2). All these millions occupy

more space, produce more materials, and use more energy, resulting in more waste, more pollution, more modification of the natural world… As French intellectual Claude Lévi-Strauss put it, "Le monde est trop plein" (Eriksen, 2016, p. 1). What can this lead to but overheating?

The accelerated growth of the human population has been facilitated by certain milestones of 'progress' such as the development of medicine, agriculture, housing construction, etc., (Lutz and Qiang, 2002). In turn, the increasing needs and wants of these humans have accelerated the growth of urbanisation, energy consumption, mobility, and all the other trappings that go with urbanisation. Eriksen (2016, p. 83) reckons that, though the city is central to the cultural history of humanity, the rapid growth of urbanisation is what has 'brought us into the Anthropocene'. Accelerated growth in the Global South "is bewildering and unmanageable" because the fastest growing sectors are often the slums and informal settlements (Eriksen, 2016, p. 84). This makes it difficult to manage the resulting energy consumption and waste production. Waste production, which Eriksen says is a result of affluence and surplus, is the most perceptible side effect of accelerated change, because it pollutes the air, the sea and the land, in ways which have far-reaching consequences on the quality of life on Earth (Eriksen, 2016, pp. 106-107). For example, in February 2014, the smog in Beijing had reached such a level as to be compared to "a nuclear winter," which had people staying indoors and wearing masks. There were also fears of agriculture being impacted because of insufficient light for plant growth (Eriksen, 2016, p. 81). Another example is the Great Pacific Garbage Patch, an inadvertently human-made floating island, made up largely of plastic debris which is toxic to marine life (Kuchta, 2022). As Eriksen (2016, p. 109) points out: clean-ups might be attempted in specific places, and plastic waste can be moved around; but it does not disappear.

Increased mobility is another major aspect of overheating in the 21st century, the most salient element being tourism. Eriksen (2016, p. 63) proposes that, of all the steeply climbing growth curves in the 21st century, tourism is the most striking one. From 25 million tourist trips to foreign countries in 1960, the figures moved to 250 million in 1970, 536 million in 1995, 922 million in 2008, and 1 billion in 2012. As tourism flows tend to move from the Northern Hemisphere to the South due to accumulated wealth exploited from colonisation, the expected result is overcrowded cities and an overspill of waste that sometimes flows directly from tourism establishments into the sea. In such places, Eriksen comments, "the poverty of the public sector is just as striking as the private wealth, especially but not exclusively that of the foreign visitors" (2016, p. 41). Lévi-Strauss' *Tristes tropiques* aptly describes the degradation of Third World environments by the capitalist world system and tourism:

> [n]ow that the Polynesian islands have been smothered in concrete and turned into aircraft carriers solidly anchored in the southern seas, when the whole of Asia is beginning to look like a dingy suburb, when shanty towns are spreading across Africa, when civil and military aircraft blight the primaeval innocence of the American or Melanesian forests even before destroying their virginity, what else can the so-called escapism of travelling do than confront us with the more unfortunate aspects of our history? (Lévi-Strauss, 1961, p. 43).

And yet, as Eriksen (2016) says, we seem to be all caught in a double bind. Though many researchers and policy-makers agree that climate change and global pollution are part of the irreversible effects of human activity, continued economic growth is still the priority even though this obviously undermines global survival (Eriksen, 2016, p. 7). Progress has become a treadmill from which it is difficult to get off, because it has become synonymous with modern notions of the good life; even though the question of unsustainability is glaringly obvious (Eriksen, 2016, p. 33).

Islands and the Anthropocene

SIDS are particularly vulnerable to the effects of the Anthropocene because of their smallness and geographical nature, and this is compounded by the fact that "small territories are often left outside the global ecological footprint databases and models" (Guillotreau et al., 2023, p. 1). In fact, in discussing islands and the Anthropocene, Larjosto (2018, p. 2) proposes that:

> The Anthropocene engenders new spatial trajectories on islands worldwide [because] islands are a diverse category that encompasses attributes like smallness, isolation, boundedness, and littorality.

In short, islands are both vulnerable to human designs to use them as laboratories and getaways, and to the impact of natural disasters engendered by human action, yet have limited agency to control these impacts because they are considered too small to be included in global studies.

Human interference with (and on) small island territories is not limited to the 20th century when the effects of the Anthropocene recognizably began to impact on them. However, human designs on them became more pronounced during the colonization period, and in its aftermath, island societies and landscapes faced overwhelming changes (Larjosto, 2018, pp. 4-5). Baldacchino (2010, p. 4), for example, points out that:

> …if one wishes to transform a place in order to endow it with the possibility of doing something different, perhaps shady, perhaps unconventional, perhaps dangerous, whether utopic or dystopic, or simply exceptional, and in any case requiring both containment and distance, then that place should be on an island, or an island *in toto*.

The most extreme example perhaps, is the case of Bikini Atoll which was used by the US Government in the 1940s to test nuclear bombs. Such actions permanently damaged the environment of the island, as well as caused their native peoples to be displaced and their livelihood and health affected (Niedenthal, 1997; Baldacchino, 2010, pp. 16-17). Less violent, but still impactful, interference with islands and their ways of being in the modern culture of global capitalism include using them for offshore finance, and as playgrounds for the rich, to the extent that they can even be bought or leased (Baldacchino, 2010, p. 13; Larjosto, 2018, p. 6). Whilst it is easy to succumb to mainlanders' fascination with islands and embark on development projects in the name of progress, the carrying capacity of island landscapes and seascapes are limited and are often strained (Larjosto, 2018, p. 6).

The physical fragility of islands is also a strong point of reflection in considering the impact of the Anthropocene on them. They are in fact, considered as 'front-line zones' where the problems associated with development and environment, such as eco-system disruption, are unfolding every day (Baldacchino, 2010, pp. 15-16). The fragility of island ecosystems is such that they can be wiped out in a very short time, for example, as a result of volcanic eruptions (Baldacchino, 2010, pp. 16-17). With regards to climate change itself, the impacts are most tangible in small island states, both for human populations, flora and fauna, and physical features. For example, sea-level rise causes serious coastal erosion and may even submerge whole islands (Baldacchino, 2010, p. 15). Other impacts include ocean acidification, coral bleaching and extreme weather conditions such as storms; whilst at a local level, urban centres, which are often coastal, also impact on the environment (Larjosto, 2018, pp. 6-8).

Especially in SIDS, large scale pollution from distant metropoles impacts on both their seascapes and landscapes, for example through marine plastic debris affecting the livelihoods of fishing communities, and polluting popular coastal resorts (Larjosto, 2018, p. 6; Noam et al., 2023, p. 2). However, and in spite of their relatively small size, island populations are also actors in global warming: they also have urban centres, consumerism and pollute mainly through private vehicular transportation.

Exogenous threats

Seychelles' tourism slogans, officially adopted by the Tourism Board, suggest that the archipelago is immune from the effects of the Anthropocene. In fact, they are an invitation to get away from the madding crowd, to a place of unspoilt purity and rejuvenation. The first, dating back to the 1970s when the airport opened, was "Islands of Love", followed by "Unique by a Thousand Miles," which ran for twenty years, and then the third with "As Pure As It Gets" (Seychelles Nation, 2006). The current slogan, launched in 2020, is "Experience Seychelles: Our Home, Your Sanctuary" (Ernesta, 2020). Whilst the first one is typical of the 1970's stereotypes of tropical islands as romantic getaways, the other three evoke the insulation of the islands from the hectic and congested lifestyle of the metropole, with all its associated dangers and disadvantages. However, by the very definition of the Anthropocene, one has to assume that, even if far away, there must be some impacts on Seychelles that one needs to acknowledge. In this section, the focus is on the exogenous threats faced by the archipelago as a result of the Anthropocene.

Marine plastic debris

The sea is Seychelles' most valuable asset because it is a major resource for the two principal economic pillars of the islands: tourism and fisheries (Benoit, 2021). It is important to note, however, that the sea is also the main conduit of one of the most damaging impacts of the Anthropocene in the archipelago, which is plastic debris (Lawen et al., 2024; Balderson and Martin, 2015). There are two major sources of plastic debris in the Southwest Indian Ocean. The first source, which is the most significant, is terrestrial, mainly through littering and poor waste management (Noam, et al., 2023; Lawen, et al., 2024). The second source is through marine activities, such as the use of drifting fish aggregating devices (DFADs), made primarily of plastic materials, to increase fish catch (Balderson and Martin, 2015). Plastic debris has damaging impacts, both perceptible and imperceptible, on the quality of life of all living species in the Seychelles archipelago. In this section, we shall look at some o these impacts and their exogenous sources.

The Southwest Indian Ocean is a rich fishing ground which attracts a lot of foreign fishing companies from developed countries (Lecomte et al., 2017). For example, Seychelles has signed agreements with the European Union and Taiwan that allows for their fishing vessels to operate in the country's marine jurisdictional waters (FiTI, 2025, p. 13). These fishing vessels contribute significantly to marine littering in the region; the use of DFADs for tuna fishing is prevalent in the Western Indian Ocean, with the Spanish fleet securing 83% of its catch with this method (Balderson and Martin, 2015, p. 1). It is difficult to quantify the number of DFADs littering the sea around Seychelles because the data is considered sensitive by the fishing companies (Balderson and Martin, 2015, p. 1). The introduction of Regional Fisheries Management Organisations (RFMOs) since 2020 should normally have addressed such issues. However, scientists claim that there are discrepancies between the legal and governance framework, and the fisheries science and management practice (Karim et al., 2020). In other words, economic progress takes precedence over environmental conservation. In the case of Seychelles specifically, whilst the country does try to comply with RFMO resolutions, there

are still challenges in their implementation and enforcement (Fisheries and Aquaculture Bill, 2025; FiTI, 2025).

Seychelles is also highly affected by plastic debris of terrestrial origins from exogenous sources. Its outer islands especially, and other remote islands in the Western Indian Ocean, have accumulated debris on their coastlines which has been transported by ocean currents, winds, and waves over great distances (van Sebille et al., 2020). A recent study identifying the sources of marine debris in the region found the following categories of debris:

> Class A: mm scale plastic fragments, nurdles
> Class B: bottle caps, small domestic items
> Class C: beach sandals, bottles, foam sheets, buoyant nets
> Class D: discarded fishing gear (ALDFG) with buoys; robust empty bottles (Noam et al., 2023).

For the Outer Islands of Seychelles, the most likely source of Class A debris is East Africa, principally, Tanzania; while Comoros is the most likely source for such debris around the Aldabra Atoll and Assumption (Noam et al., 2023, p. 6). For Aldabra Atoll, a UNESCO World Heritage Site celebrated for its unique ecosystem and regarded as a global biodiversity hotspot (Seychelles Islands Foundation, 2025), this is a serious risk. As for the Class B debris, Indonesia is reckoned to be responsible for over 50% of this throughout the Outer islands of Seychelles, whilst for the islands on the northernmost Seychelles Plateau, that is, Denis and Bird islands, India and Sri Lanka are deemed to be the source (Noam et al., 2023, p. 6). Class C debris is reckoned to originate mainly from Southeast Asia; whilst Class D debris stems from fisheries activities in the Western Indian Ocean, with China, Malaysia and Thailand being the prime suspects (Noam et al., 2023, p. 15).

Both terrestrial and marine sources of plastic debris have serious consequences on the quality of life of people, flora and fauna in Seychelles, with some of the damage being irreversible. People tend to react most to the perceptible effects of marine debris because it is right there in their faces. The sight of a green turtle or dugong entangled in an old fishing net or plastic wrapping is a chilling reminder of the devasting effects of plastic debris on protected marine species and the pollution of the islands' celebrated 'pristine' waters. The imagery is used very effectively in environment campaigns (Vogt-Vincent and Burt, 2023). These kinds of impacts occur from the larger types of floating plastic debris, which also present a threat to shipping, as well as to protected marine species (Lawen et al., 2024, p. 1). For example, abandoned DFADs are responsible for damaging coral reefs and killing several species of sea turtles in the remote St. Francois atoll (Balderson and Martin, 2015, p. 8). In such cases, the immediate concern is for environment protection and the impact on the Seychelles tourism industry (Lawen, 2024; Noam et al., 2023).

As for the imperceptible impacts of marine plastic debris, the long-term effects should be serious cause for concern. A vast majority of the plastic debris entering the marine environment sinks to the bottom and merges with deep-sea sediments (Woodall et al., 2014). Eventually, these merge with other floating micro-plastic debris in the water, are ingested by marine species, and thus enter the food chain, whereby humans are also affected (Gola et al., 2021; Yu and Singh, 2023). Though there is a considerable amount of literature on the long-term effects of marine micro-plastics on marine species, and consequently, humans, there does not seem to be a high level of alarm on the subject (Marchala et al., 2024; Bhuyan, 2022; Sana et al., 2020). Such indifference seems to be typical of human attitudes in the Anthropocene era, where consumerism and material wants take precedence over sustainability needs.

As a SIDS, Seychelles does try to comply with marine environment sustainability laws and initiatives, through organisations like FiTI. For example, whereas previously, foreign fishing vessels were able to avoid scrutiny regarding the data on the deployment of DFADs because of confidentiality clauses (Balderson and Martin, 2015), the Seychelles Fisheries Authority has now removed all such confidentiality clauses in foreign fishing agreements (FiTI, 2024). However, like other SIDS in the region, the Seychelles Government still has to bear the cost of dealing with plastic waste it has not generated (Noam, et al., 2023, p. 2). This is contrary to the "polluter pays" principle (OECD, 1975). But SIDS rarely have the clout to apply such policies, except to protest in big international forums and through alliance and advocacy (UNEP, 2025).

Climate change

Another exogenous threat to Seychelles as a result of the Anthropocene is climate change. Apart from the obvious environmental impact, which is manifested through extreme weather conditions, Seychelles also faces economic and social consequences of climate change (Payet and Agricole, 2006). In this section, some of these impacts are considered, in both the terrestrial and marine environment of the archipelago. These include extreme weather, coastal erosion, coral bleaching and fish depletion.

Seychelles has faced several disasters in the last four decades or so, due to changing rainfall and drought patterns (Etongo, 2019, p. 45). Past research on changes in precipitation and air surface temperature in Seychelles suggest that the country has been experiencing a much warmer and wetter climate. However, this has not led to more available water to the country, but rather longer dry spells with more intense precipitation events with damages to agriculture and infrastructure (Payet and Agricole, 2006). For example, Mahé suffered extreme rainfall in 2004, 2006, 2007 and 2012, which caused flooding and infrastructure damage (Khan and Amelie, 2014; Payet and Agricole, 2006). The most recent major disaster in 2023 caused three fatalities in the northern area of Mahé due to heavy rainfall and landslides, and there was extensive damage to homes and property (Joubert, 2023). Increasingly extended droughts have led to forest fires and water shortage, which have impacted on agriculture and other domestic and industrial needs (Etongo, 2019, p. 45). Forest fires have caused forest degradation on the island of Praslin, the home of the Vallée de Mai, a UNESCO World Heritage Site, endangering its unique and fragile ecology. These fires have affected the water cycle and consequently, the livelihood of farmers further downhill (GEF, 2020).

Coastal vulnerability is another major climate change issue in Seychelles. Etongo (2019, p. 45) argues that Seychelles' limited land area exposes it to what is known as 'place vulnerability'. The very fact of it being composed of small islands makes the country more vulnerable to climate change impact than continental countries. Furthermore, because of its steep topography, most of Seychelles' commercial and industrial infrastructure is situated on the coast (Jones et al., 2002, p. 32; Etongo, 2019, p. 45). At a recent conference, the Minister for Transport, Antony Derjacques, spoke about the increasing frequency of storm surges and rising sea levels which have damaged roads all along the coast, affecting economic activity, public safety and connectivity (Ministry of Transport, 2025). The Minister stressed on the risk to Seychelles' beaches and tourism activities, which are central to the country's economy.

Seychelles has not escaped one of the most important impacts of climate change on its marine ecology, that is, coral bleaching. This occurs when the sea temperature rises due to increased carbon dioxide in the atmosphere, stressing coral reefs which in turn leads them to expel the symbiotic algae that live in coral polyps. Without these algae, corals starve and die (Domingo, 2021). The most disastrous coral bleaching event in Seychelles occurred in 1998 as

a result of the El Niño weather phenomenon, when seawater temperatures rose by 2 to 3° Celsius above the mean (Goreau et al., 2000; Jones et al., 2002; Domingo, 2021). Coral bleaching events since then have occurred more regularly, with the latest event in 2024 affecting Aldabra's coral reefs quite severely (Uzice, 2024). Other significant events occurred in 2016 and 2019 (Domingo, 2021). The ongoing climate change impacts on sea temperature in Seychelles waters is likely to trigger more coral bleaching events in future, which could possibly lead to some coral extinction by 2040 (Payet and Agricole, 2006). This is significant as coral bleaching has impacted not only the biodiversity of Seychelles' marine life, but also its economy through depletions of fish stock and reduced marine park activities (Jones et al., 2002, p. 31).

Fish depletion in Seychelles waters is another important indicator of the impact of climate change in the Indian Ocean region. According to the World Bank, Seychelles' fisheries industry contributes to around 20% of the country's GDP, being the second most important economic pillar after tourism (Alberts, 2022). In 2012, Seychelles was one of the top tuna producers in the world, representing 24% of its GDP (Marsac, 2017). There are two factors linked to the Anthropocene era which could affect this output. One is the possibility that the partners Seychelles has signed fishing agreements with, from Taiwan, China and member states of the European Union, might be overfishing, thus depleting the stock in Seychelles waters (Alberts, 2022). However, climate change has played a significant role in this domain. For example, scientists have noticed that climatic anomalies, such as El Niño and Indian Ocean Dipole events, affect ecosystem productivity, causing the relocation or shrinking of the tuna fishing zones (Marsac, 2017). After the 1997-1998 coral bleaching event for example, the fish in the Western Indian Ocean basin fled to the eastern basin (Robinson, et al., 2010, pp. 150-151). A 2024 study has highlighted how the Indian Ocean region is likely to face more severe climate impacts than had originally been anticipated. While the southern region of Seychelles stands a high risk of being affected by marine heatwaves, the northern area is menaced by the possibility of sea surface temperature rise. Both scenarios will affect the availability of pelagic fish species (Ministry of Fisheries and Blue Economy, 2024). Since Seychelles has developed such high dependency on the tuna industry, alongside tourism, climate variability and change will severely impact its economy (Robinson et al., 2010).

The exogenous threats to Seychelles' livelihood and the quality of life of its residents are only too real. Unlike what its tourism slogans suggest, the archipelago is not insulated from the far-reaching impacts of the Anthropocene. Because the country is made up of islands, it is vulnerable to recurring marine pollution impacts such as plastic debris littering the beaches of its prized 'getaway islands', damaging its coral reefs, and entangling its protected marine species to death. And silently, humans ingest and build up microplastics in their bodies through the marine food chain. With rising sea levels and temperatures damaging the coastline and negatively impacting its fisheries industry, Seychelles faces not only the physical effects of the Anthropocene, but also has to deal with the financial impacts, which puts a stress on its economy. The Central Bank of Seychelles has estimated the extra costs for mitigation measures at US$330 million in 2023, and US$339 million for adaptation measures: a sum equivalent to around 5% of annual GDP (CBS, 2023, p. 9). As such, climate impacts represent a material risk to the stability of the financial system, both at a micro and macro level (CBS, 2023, p. 6).

Endogenous threats

Seychelles has been very active in SIDS advocacy in the international arena, on the subject of climate change and SIDS vulnerability, including at the UN (Baldacchino and Antat, 2023; Bueger and Wivel, 2018, p. 2; UNSDG, 2025). The country's commitment to environment sustainability and climate change action is also reflected in its youth's engagement towards this cause and their involvement in international environment forums (Seychelles Nation, 2022). However, Seychelles' own carbon footprint must be measured against its status as a high-income economy (Seychelles Nation, 2015). In this section, we shall look at how Seychellois society has changed from a simple self-sufficient culture to one of consumerism, therefore, contributing to the Anthropocene phenomenon. In other words, how is Seychelles managing the double bind of progress and sustainability, or is it caught on Eriksen's 'treadmill of progress?' (Eriksen, 2016, p. x).

Consumerism

As a small state, Seychelles' consumerism has not escaped the world's notice (Eriksen, 2019, p. 13; Eriksen, 2020, p. 13; Pal, 2019). Ironically, in the context of colonial expansion, Seychelles as a country came into being with the principle that it should not only be a strategic hub in its conquerors' imperialistic endeavours, but be productive and contribute to the macro-economy (Scarr, 2000, pp. 6-7). This is true of France especially, since the islands' purpose were originally conceived as a spice garden to compete in the Eastern spice trade of the 18th century (Scarr, 2000, p. 7; Franda, 1982, p. 10). As an ex-colony, the archipelago initially subsisted on a plantation economy, exporting cash crops like vanilla, copra, patchouli and cinnamon, right up to the 20th century (Eriksen, 2020, p. 14). However, the reality of Seychelles' small island topography has meant that it could never compete with big transnational companies on the global market, with the end result that modern Seychelles is very much import-dependent (Eriksen, 2020, p. 14). In this context, the country is contributing to the global capitalism that caused the Anthropocene and is presently exacerbating it. The traditional Seychellois creole culture and lifestyle emerged from the creole garden that slaves were obliged to grow in their backyards or on the provision grounds allocated to them by their plantation masters, for their subsistence (Choppy et al., 2021, p. 3). Though the societal norms and practices were supposedly dominated by the French colonists, the slaves were a majority of the population in the settlement period and beyond, and so contributed significantly towards the creation of a creole cuisine (Barallon, 2018). From their creole gardens, the slaves could obtain starchy foods, vegetables and fruits for their subsistence, herbal medicine for their ailments, and even organic solutions for pest-control and fertilisers (Choppy et al., 2021, p. 6). From a pilot study conducted over 2020 and 2021, it was proposed that by adhering more to the creole lifestyle offered by the creole garden, Seychelles could take a small step towards reducing its carbon footprint in the pharmaceutical and food import sections. The elders who were studied in the project, pointed out that they and their families went less often to the doctor for small ailments because they used home-made remedies. They also spent less on shop-bought goods because they ate more home-grown food (Choppy et al., 2021, p. 10). However, the study also showed that the creole garden is associated with the older generation, and is hardly known or practised by the younger generation. As pointed out by Eriksen (2020, p. 13), 21st century Seychellois society shows "a marked preference for imported commodities rather than locally produced goods".

A reliance on imported commodities means that, like other SIDS, Seychelles' plastic footprint has become critical to the country's environmental sustainability (Guillotreau et al., 2023). While lobbying against exogenous sources of plastic waste that affect SIDS' environmental sustainability, it is important to be aware of Seychelles own contribution to

plastic waste in its marine and terrestrial environment. According to past research, the main sources of plastic waste in SIDS are domestic waste and tourism activities, littering and improper waste management practices (Duhec et al., 2015; Monsanto et al., 2022). In Seychelles, imported manufactured goods represent more than half of the country's plastic footprint (Guillotreau et al., 2023, p. 13). The food industry is responsible for another 18% of Seychelles' plastic footprint, inclusive of waste products such as PET bottles, yoghurt pots and Styrofoam boxes (Guillotreau et al., 2023, p. 16). In summary, with an annual plastic footprint of 74 kg per capita, Seychelles "behaves like a high-income country, but without the returns to scale and facilities needed to manage a too high waste tonnage" (Guillotreau et al., 2023, pp. 19-20). This is indicative of a waste management issue that could worsen as the country's plastic footprint increases.

Energy use in Seychelles relies heavily on fossil fuel, with more than four-fifths of its electricity generated from fossil fuels (Low-Carbon Power, 2023). This contributes significantly to environmental challenges such as climate change and air pollution (Low-Carbon Power, 2023). The increasing amount of car importations in the country, of which most use fossil fuel, is not helping the situation. Passenger cars increased from 7,000 in the year 2000 to 23,000 in 2020 (Simeon, 2022). In 2023, Seychelles was the 166th largest importer of cars in the world, out of 225 jurisdictions, and in the same year, cars were the 4th most imported product in Seychelles, out of 1,092 products (OEC, 2023).

It must be said though, that the government's mindfulness of environment sustainability is reflected in the recent trends to import more cars that use less fossil fuel or not at all. The figures given by the Ministry of Transport for such vehicles registered from 2015 to 2024 are 454 fully electric vehicles and 5,106 hybrid vehicles (email communication, Senior Transport Inspector, Ministry of Transport, Seychelles, June 2025). However, the problem of congestion remains unresolved since Seychelles' limited land space makes it difficult to upgrade the road network accordingly. In fact, as far back as 2008, the government was already trying to limit vehicle imports due to pressure on existing infrastructure, but with limited success (Seychelles Nation, 2008). Apart from the daily congestion in Victoria and the roads leading to and out of it in peak hours, the quality of life in Seychelles could be affected by air pollution from traffic (Baldacchino & Atayi, 2024). In February 2025, for example, the mainland, Mahé, was affected by a lingering haze which caused certain respiratory symptoms in vulnerable groups such as children and elderly people (Ministry of Health, 2025). Though there is a general tendency to believe that whenever there is an incidence of smog in Seychelles, it must have come from exogenous sources such as Southeast Asia, research suggests that local sources are mostly to blame for the country's occasional bad air (Joubert, 2024).

Tourism

Though Seychelles started life, like many other small tropical islands, as a plantation society, in the post-colonial era, tourism has always been its economic mainstay, ever since the opening of its international airport in 1971 (Rosalie and Campling, 2020). In fact, before tourism, the islands had been described as a colonial backwater. Real social development only started when tourism picked up in the 1970s due to the fact that it contributed directly to the economy and allowed the larger masses of impoverished slave descendants to seek out new job opportunities outside labour-intensive agriculture (Campling et al., 2011). Seychelles' natural beauty, which allows it to be desired as a utopic dream, becomes a very important card to play in the tourism marketplace, since it has almost no other resources, apart from the sea (Benoit, 2021). And there comes the double bind: preservation of the islands 'pristine' nature is paramount to keeping the tourists coming. But: the more tourists come, the more the pristine

state of the environment is at risk. And the more the archipelago contributes to the effects of the Anthropocene. This is a dilemma that every government in Seychelles has to face.

Global tourism is an important contributor to greenhouse gas emissions (Gossling and Schumacher, 2009, p. 377). Yet, the tourism arrival count has become so important in the Seychellois psyche because it has come to be equated with economic stability (Tourism Seychelles, 2024). Tourism accounts for 70% of the country's foreign exchange revenue, and represents about 72% of its GDP (Seychelles Trade Portal, 2025). During the Covid-19 Pandemic, global airport closures brought tourist arrivals in Seychelles to a dramatic low: from 361,844 in 2018; 384,204 in 2019; and suddenly, 114,858 in 2020 (Seychelles Trade Portal, 2025). As a result, the country's real GDP experienced a 10.7% decline in 2020, instead of the projected 3.3% increase prior to the pandemic outbreak (African Development Bank, 2021). There was a general scare in the country, with the government taking measures to redraft the annual budget in order to address the situation (Pointe, 2020). Everyone breathed a sigh of relief when tourism arrivals started to go back up after the reopening of the border in 2021 (Seychelles Trade Portal, 2025).

Having established the fact that Seychelles practically cannot survive without tourism, let us now take a look at tourism impacts from a more global perspective. Gossling and Schumacher (2009, p. 377) opine that the share of global emissions of carbon dioxide due to tourism can be particularly high in SIDS that are considered important destinations or markets. The situation is particularly critical in SIDS where visitor numbers are much higher than their resident population (Gossling and Schumacher, 2009, p. 377). Seychelles' tourist population was already more than four times that of its resident population in 2018 and 2019 (Seychelles Trade Portal, 2025). Apart from the increased air traffic that contributes to the emission of harmful gases into the atmosphere (Puharić et al., 2020), the energy used by each tourist in their accommodation, not counting the waste that is produced by each, also contributes to the level of harmful gases like carbon dioxide.

Apart from gas emissions contributing to global warming, at micro level, Seychelles is close to, or has already reached, its tourism carrying capacity (Joubert-Lawen, 2023). Back in 2015, the Seychelles Government had taken measures to curb more growth by imposing a moratorium on the construction of hotels of more than 25 rooms (Pouponneau, 2021). A carrying capacity study was undertaken, resulting in another moratorium on hotels of more than 24 rooms in August 2021, unless the construction was already under way before the moratorium. However, this was being undermined by an increasing demand for change of use permits, with residents turning their homes into tourism establishments (Joubert-Lawen, 2023). The pressure from private residents is reflected in the government's consideration of possibly lifting a moratorium imposed on one of Seychelles' most popular destinations, La Digue, in 2021, as part of the 'change of use' trend (Joubert-Lawen, 2024). The same pressure is reflected in a huge hotel project at Anse a la Mouche in the south of Mahé, which had started in 2019, and which had been given the go-ahead in spite of protests from environmentalists and local residents. Apart from adding another 120 rooms to the existing stock, the hotel construction has allegedly involved the destruction of an important wetland, going against the spirit of the Ramsar Convention on Wetlands, to which Seychelles is a signatory (Pointe, 2021). This project was undertaken during the term of two different governments with different political leanings. What becomes clear is that, when it comes to the lure of economic growth, it is very difficult for environment considerations to come first.

With regards to tourism, Seychelles thus puts environment conservation very high on its agenda, given that the country's pristine condition is its main sales pitch (Pouponneau, 2021, p. 71). However, the question remains: is Seychelles an ideal getaway from the effects of the Anthropocene, or do places like Seychelles contribute significantly to the Anthropocene era? This is an important point that governments of such ideal getaways have to consider since, more often than not, tourism is the key economic driver in such places.

Waste management

As a small island state that depends mainly on tourism for its development, and with its high-income status, signalling a high level of consumerism, waste management is surely set to become problematic, as has been pointed out. This section reviews the country's management of its waste, and to what extent does waste in Seychelles contribute to global pollution.

Seychelles generates some 90,000 tons of solid waste annually (LWMA, 2024). Only about 1% of this waste is recycled (World Bank, 2023); most of it goes to the landfills. The Seychelles Government owns all landfills, and the Landscape and Waste Management Agency is responsible for their operation (LWMA, 2024). In 2010, the Mahé landfill had already been receiving 45,000 tons of waste per year since 1999; those on Praslin and La Digue had been receiving 3,500 tons and 670 tons respectively per year since 2005 (Talma and Martin, 2013, p. 4). All these landfills are now reaching maximum capacity, while a staggering 50% increase in waste has been projected by 2030 (LWMA, 2024). This makes waste management a critical issue for Seychelles: the government has admitted that the country's current trajectory with regards to waste management is unsustainable (LWMA, 2024).

The LWMA has appealed to citizens to join the government on a transformative journey towards zero landfilling; yet, several barriers to recycling in Seychelles remain (Talma and Martin, 2013, p. 3; Meylan et al., 2017, pp. 10-11). Development and over-abundance has turned the Seychellois society from its traditional culture of recycling everything out of necessity, to one which throws things away without much thought (Talma and Martin, 2013, p. 11). Secondly, though policies are in place for waste management and recycling, procedures are not sufficiently clear, leading to improper implementation. Finally, a lack of financial flexibility shackles the government from fully implementing its waste management policies (Meylan et al., 2017, p. 11).

Meanwhile, Seychelles' landfills continue to fill up and the country's carbon footprint contributes to the conditions that lead to global warming and climate change. Landfills also produce methane (CH4), which is also 21 times more potent than carbon dioxide and makes a significant contribution to greenhouse gas (GHG) emissions (Talma & Martin, 2013, p. 3). Currently, landfill methane emissions account for ~10% of all anthropogenic CH4 emissions globally (Wang et al., 2024). In the more immediate and local context, landfill fires, especially the Providence Landfill, the country's largest, have polluted the air on several occasions (Joubert, 2023). Toxic smoke from these fires threaten public health, obliging businesses and schools to close down temporarily (Ernesta, 2020). A fire in September 2020 burned for a number of days, spreading toxic smoke into the atmosphere for an extended period; it contributed to the general air pollution in the immediate vicinity of the archipelago. As Eriksen (2016, p. vii) points out, progress is a double-edged sword.

Conclusion

At this point in time, Seychelles might still be said to represent a paradisiacal getaway from the busy and overcrowded metropoles of the world. It is still far enough away to guarantee relatively clean air and a certain measure of isolation, depending on the level of isolation you want and the amount you are prepared for, or can afford to purchase. However, if global industry continues at its current pace, and if greener solutions are not adopted by big and small economies alike, no place on the planet will be able to present even an illusion of paradise. Micro-plastics already represent both a visible and invisible contaminant in so-called 'pristine' waters. During the Covid-19 pandemic, the planet showed us that, given time, it can heal itself, if only it had the chance to breathe: if there was a respite in gas emissions, in consumerism, in overspilling waste. All over the world, people marvelled at being able to see the night sky again, where the stars had once been obscured by a permanent layer of smog. However, pollutants in the air remained high, giving cause for concern about the level of damage already done to the atmosphere (Adam et al., 2021).

As for local action in Seychelles, the government has put in place some important strategies aimed at greener solutions for the country, and there are various NGOs and government groups involved in climate change action. However, the implementation of these strategies and actions remain problematic due to various barriers such as financial constraints, scientific knowledge and understanding the institutional issues (Etongo, 2019). Some of these issues may be related to the competitive treadmill syndrome (Eriksen, 2016). Individuals and groups are more concerned with the present need of staying financially afloat or increasing profits, whilst the government itself faces difficult decisions: how to choose between maintaining moratoriums on hotel rooms or lifting them to secure more income for its growing voting population? (Benoit, 2021; Pouponneau, 2021). Eriksen proposes a possible solution, with Seychelles redefining its economic niches; after all, its comparative advantage lies in services and location, not in goods production. Moreover, as a small society, Seychelles may be better placed to "negotiate its future in a carbon neutral world," compared to larger societies bogged down by powerful corporate interests and heavy conventions (Eriksen, 2020, p. 18).

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