How do Small Island Developing States Meet the Sustainable Development Goals?

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Abstract

States in the Global South are facing a double challenge of achieving socio-economic development while adapting to climate change impacts. This study maps to what extent Small Island Developing States (SIDS) manage to meet the Sustainable Development Goals (SDGs). The SIDS are at the front line of climate change and while they share numerous challenges, the SIDS are also a heterogeneous group containing a great variation in terms of economic development, institutional structures, and factor endowments. This paper complements the existing broader international evaluation of SDG outcomes by highlighting SIDS specifically, a group that has been only sporadically covered in the literature. By improving our understanding of different SIDS's development status and challenges we hope both to make the group more visible in the global debate and to contribute useful knowledge to the ongoing development work in and between the SIDS themselves. We compare the SIDS development performance, defined as meeting the SDGs, to a Global Average (GA), in the three dimensions of sustainable development – economic, social, and environmental. Our investigation confirms that the SIDS are overrepresented among the countries in the world with the poorest data coverage and shows the magnitude of the problem. Further, in our global comparison, we find that they stand out in three aspects – having relatively low levels of poverty, high levels of adult obesity, and low levels of gender equality especially manifested in the share of women in parliament.

Keywords: sustainable development, Small Island Developing States (SIDS), Sustainable Development Goals SDGs, economic dimension, social dimension, environmental dimension

1. Introduction

States in the Global South are facing a double challenge of achieving socio-economic development while adapting to climate change impacts. In this paper, we investigate to what extent Small Island Developing States (SIDS) manage to address this double challenge and meet the Sustainable Development Goals (SDGs). The SIDS consists of 58 marine territories (see Appendix, Table 1), including non-independent states, and was first recognized as a separate entity in 1992 at the United Nations Conference on Environment and Development. They are at the frontline of climate change tackling its consequences such as sea-level rise, ocean acidification, and increasing frequency of natural disasters (Betzold, 2015; Guillaumont, 2013; Scandurra, Romano, Ronghi, & Carfora, 2018; Thomas, Baptiste, Martyr-Koller, Pringle, & Rhiney, 2020).

The SIDS constitute a heterogenous group containing a great variety in terms of economic development, initial conditions, historical legacies, institutional structures, and factor endowments. Still, many SIDS share basic characteristics such as being remotely located and highly dependent on international trade, while having limited land-based resources, growing and often low-skilled populations, small domestic markets, and expensive public

administrations (Becker, 2012; Briguglio, 1995; Guillaumont, 2013; Khor, Kronenberg, & Tumbarello, 2016). These attributes complicate their ability to achieve economic, social, and environmental sustainable development.

Because their needs and capacity to respond to current challenges vary significantly, there is reason to expect their pathways to be versatile. The analysis of their varying development status is, however, muddled by the SIDS suffering from poor data coverage, meaning that data on their performance is scarce and scattered. Because of the poor data, SIDS are often cursory addressed in the ongoing international efforts to track and document sustainable developments in relation to the SDGs (Petzold & Magnan, 2019; Sachs, Kroll, Lafortune, Fuller, & Woelm, 2021). Consequently, while the SIDS work towards collaboration and building joint strategies, scholars, policymakers, and politicians within the SIDS as well as in the international community lack imperative information to analyse actual development levels, understand the current trajectories, and suggest alternative solutions.

In this paper, our overarching aim is to complement the existing broader international mapping and evaluation of SDG outcomes by highlighting SIDS specifically. By improving our understanding of SIDS's specific development status and challenges we hope to make the group more visible in the global debate and to contribute useful knowledge to the ongoing development work in and between the SIDS themselves. We pose three research questions: **(i) How can we measure SIDS poor data coverage and what are the implications for our study? (ii) How do SIDS fare in relation to the three dimensions of sustainable development (economic, social, and environmental) embodied in the 2030 Agenda? (iii) What are the similarities and differences between SIDS in meeting the SDGs?**

Our study confirms that SIDS are highly overrepresented among the most data poor countries in the world. By default, studies of SIDS relying on statistical data to evaluate SDG outcomes (or other development targets), including the present one, experience substantial limitations regarding what and who can be analysed. This finding emphasises the dire need to improve the SIDS's statistical capacity.

Further, we evaluate the SIDS's development performance, defined as meeting the SDGs with the three dimensions of sustainability (economic, social, and environmental), compared to a constructed Global Average (GA) excluding the OECD[1]. While SIDS overall resemble other developing countries, there are a few aspects where they deviate. First, there is a positive result as poverty levels measured by international standards are generally relatively low. Further, there are two adverse results that stand out – health hazards due to high adult obesity levels and low gender equality levels, especially manifested in the share of women in parliament. Finally, our results give cause to further reflect on SIDS' potential to develop alternative Blue Economy-led trajectories based on their large ocean territories and substantial marine resources. However, for more insightful policy recommendations for individual SIDS, our cursory overview needs to be complemented with additional country specific research.

The rest of the paper is structured as follows. In section 2, we outline the development of the SDG agenda and its relevance to the SIDS. Then we discuss the SIDS' development challenges more specifically. Sections four and five contain our analysis. First, we map the (poor) data availability, select our case countries, and motivate our choice of SDG indicators. Next, we compare the selected SIDS development performances to a Global Average (GA) that we construct excluding the OECD countries. We discuss our results for the three dimensions of the sustainability agenda (economic, social, and environmental), including potential patterns and identification of country outliers. In the final section, we conclude.

2. Defining and Evaluating Sustainable Development

In 1972, the Brundtland Commission Report introduced *sustainable development* as 'development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs'. The concept has become the leading development paradigm within the global policy agenda, and in 2015 the UN launched Agenda 2030 with the call to developing and developed countries alike to incorporate a broader understanding of the well-being of people and planet. The ambition is to work towards positive economic and social impacts while at the same time confronting the environmental challenges of climate change and extinction of species (Mensah, 2019; Taylor, 2016). The Agenda 2030 is translated into 17 Sustainable Development Goals (see Figure 1) with a list of 169 targets and 232 indicators. The goals are interdependent and interlinked, bringing to the fore synergies and trade-offs that nations and policymakers need to prioritize based on country-specific needs and resource availability (Breuer, Janetschek, & Malerba, 2019.

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[1] Our empirical strategy when constructing the Global Average is further explained in section 5.

Figure 1. The Sustainable Development Goals, SDGs

While Agenda 2030 is guiding much of the current work of international organizations, there is also substantial criticism against the content, measurement, and ambition of the SDGs. As climate change is progressing with increasing speed, some argue that they are 'too little, too late' and that a much more radical agenda is needed (Kotzé, 2018). Others point to the impossibility of the ambition to cater for all aspects of development at the same time. For example, Hickel (2019) points out that historical experiences show that it is not feasible to expect a decoupling between the growth process and material footprints such as reductions in resource use and CO2 emissions. The balancing-act between economic development and ecological impact becomes even more complicated when considering the Leaving No One Behind (LNOB) principle (Klasen & Fleurbaey, 2019; Nilsson, Griggs, & Visbeck, 2016). Within rich countries, there is an opportunity to address LNOB primarily through the redistribution of resources and a strive for reduced inequalities. Such strategies relate to sustainability ambitions presented within the literature on de-growth and circular economy, arguing for a need to think differently about our consumption levels and patterns (Latouche, 2009; Korhonen, Noor, Feldmann, & Birkie, 2018). Meanwhile, for the developing countries, improved government finances paying for social development and material improvements for the wider population need to be accompanied by economic growth. Finally, some researchers question whether the two big assumptions on which the SDGs rest, sustained economic growth and globalization, are still valid in the aftermath of the Covid-19 pandemic (Naidoo & Fisher, 2020).

While most of the current global development efforts stay focused on the SDGs, the monitoring of global goals as well as the task of measuring and evaluating progress for individual societies at very different stages in their development, is an elusive task. Since the implementation of the SDGs in 2016, researchers Jeffrey Sachs, Guido Schmidt-Traub, Christian Kroll, and Guillame Lafortune have published *The Sustainable Development Goals Report.* In the 2021 issue, they gave the most recent presentation with statistics for 211 indicators (Sachs et al. 2021: 5). These indicators were selected for: 1) monitoring the achievements of the SDGs; 2) being internationally comparable; 3) representing valid and reliable measures; 4) being up-to-date; 5) representing the best available measures; and 6) covering at least 80 percent of the 149 UN member states with a population greater than 1 million (Lafortune, Fuller, Moreno, Schmidt-Traub, & Kroll, 2018: 7-8).

The report is recognised as an important instrument for the research and policy communities to evaluate individual countries' and regions' progress in relation to Agenda 2030. However, it also reveals the challenges for developing countries, including the SIDS, to have the statistical capacity to deliver comparable data and thereby be included in the global development agenda. This means double challenges. First, while Agenda 2030 adhere to the LNOB principle, countries experiencing data poverty and being unable to measure and document their status in relation to the SDG targets and indicators risk being excluded from the global dialogues and joint efforts. Second, states that lack sufficient data to determine their own development trajectory will grope in the dark when determining the current status, evaluating possible progress, and setting up new targets for the road ahead.

Since the establishment of the SIDS group and the start of the territories' cooperation, the lack of data has repeatedly been recognised as one of the main vulnerabilities preventing the members to have a proactive response to, for example, the threats of climate change, food insecurity, overdependence on trade, and political legitimacy. Data management capacity was identified as a priority at the Barbados Programme of Action, BPOA, in 1994, and it was again called upon at the Mauritius Strategy in 2005 and the Third International Conference on SIDS organized by the UN in 2014 in Samoa. Pre-dating the Agenda 2030, these conferences aimed to commit, cooperate and implement shared strategies and solutions in the fight against climate change and increased frequency of natural disasters while ensuring socio-economic development and environmental conservation.

3. Challenges for Small Island Developing States

One of the key advantages of the current sustainable development agenda is also a core challenge – it is global and expected to be applied by almost 200 countries with very diverse contexts and development trajectories. While they constitute a heterogeneous group, many SIDS still share similar hindrances to sustainable development such as: remoteness; small landmass and under-exploited marine resources; limited human capital in terms of both size of population and levels of education; high communication, energy, and transportation costs; and excessive dependence on international trade. These characteristics combined with vulnerability to environmental shocks, including natural disasters and climate change, exacerbate the challenges of reaching the SDGs (Guillaumont, 2013; Scandurra et al., 2018; Thomas et al., 2020). While the literature on the SIDS remains limited, it contains some relevant considerations and discussions.

A first concern when analysing SIDS is their geographic location. While the Caribbean SIDS are located close to other large economies, the Pacific Islands suffer from remoteness, which increases the costs of transportation and communication with the international economy (Borgatti, 2008; UNCTAD, 2014). In addition, some Pacific Islands are archipelagic and their spatial fragmentation carries costs also within the nations themselves. Even with small and mostly homogenous populations, spatial fragmentation can be a challenge to internal politics and social cohesion in the long run.

There is a common stylised expectation that large states are richer than small ones because they have more natural resources as well as larger populations and domestic markets. However, many small states have proven that they are economically successful, and Easterly and Kraay (2000) have shown that small states in general do not fare worse than large economies. Their results are explained by small states compensating for their limited domestic markets by engaging in international trade. This is one important reason why SIDS tend to have a high degree of openness (Auty, 2019).

'Small states' are defined based on their limited land resources, including fertile arable land. However, when including the size of their ocean territories, many SIDS become sizeable and when the land and sea economies are integrated, the potential benefits that a country can derive from the marine resources contained within its exclusive economic zones compensate for the inefficiencies resulting from (landmass) smallness and remoteness (Khor et al., 2016).

Ocean resources and coastal areas are the basis of the Blue Economy (BE), a concept that aims to move beyond business as usual and to consider economic development and ocean health as compatible propositions. It promotes economic growth and social inclusion through the preservation or improvement of marine-based livelihoods while also ensuring environmental sustainability (Qi, 2022; World Bank, 2017).

Moving on, research shows that climate change has intensified the risks associated with natural disasters (Banholzer, Kossin, & Donner, 2014). For small states, sea-level rise is the main concern because it destroys the coastal infrastructure as well as the livelihoods and long-term habitability of islanders who then may seek relocation or outward migration as a solution. Solutions for adaptation to climate change[2] are costly and are estimated to take up from two to five percent of GDP (Robinson & Dornan, 2017). The toll on the budget is high,

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[2] Climate change adaptation is defined as a "process of adjustment to actual or expected climate and its effects" (IPCC 2014, p. 1758).

especially for small island economies that have relatively high levels of debt and expensive public administrations. While government policies do make a difference in the way SIDS deal with risks associated with climatic shocks (Petzold & Magnan, 2019; Sjöstedt & Povitkina, 2017), the final solutions to this environmental challenge usually lie in the hands of the large emitters rather than in the SIDS (Mackey et al., 2019).

Energy importing has set institutional barriers to decoupling from fossil fuels. The SIDS-DOCK[3] is an initiative among member countries of the Alliance of Small Island States (AOSIS) to help SIDS transform their energy sectors and address adaptation to climate change. A recent study examining the relationship between climate funding and energy substitution included some SIDS as recipients and concluded that several of them[4] have made significant improvements relative to other developing countries (Scandurra, Thomas, Pessaro, Bencini, & Carfora, 2020).

Finally, many SIDS struggle with improving the quality of their human capital in terms of health and education, and they are sensitive to outmigration (Kelman, 2015). Apart from the effects of climate change on agriculture, food imports that undermine local food production led to food insecurity and import dependency. Furthermore, food price inflation harms the nutrition, health, and living standards of low-income groups (Connell, Lowitt, Saint Ville, & Hickey, 2020).

Better human development comes with gender equality, and the effort is tilted toward the recognition of women's empowerment, their access to education, including the notion of education for sustainable development, and the realization of reproductive rights (Crossley & Sprague, 2014; Kelman, 2015). Meanwhile, the pace of migration by women and youth has accelerated, with education as the main factor behind this change (Bernard & Bell, 2018). Not surprisingly, recent research indicates that the political voice and labour of women and girls are key to having a transformative and multiplier effect on sustainable development in SIDS (Ramtohul, 2020).

4. Data Sources, Quality, and Coverage

While the importance of data collection, management, and disclosure has been emphasised at the three international conferences on SIDS – Barbados (1994), Mauritius (2005), and Samoa (2014) – the challenge remains. To say something of the magnitude of the problem, we make a data inventory of the SDG indicators from the United Nations for all countries in the world. We assign points per available indicator to assess the data availability: two points per year for data available after 2010, and 1one point per year for data before 2010. We allocate more points for more recent data, as it is more valuable for the task of measuring the current state of sustainable development (for results see Appendix, Table 2).

We find that the United Kingdom gets the highest score, 1005 points, closely followed by other Western European countries. Meanwhile, the majority of SIDS receives scores of 200 to 500 points. Subsequently, we divide the countries into three groups: 1) good data coverage; 2) medium data coverage; and 3) poor data coverage. Most SIDS end up in group three with poor data coverage, although the Dominican Republic, Mauritius, and Haiti are in group two. Within each group, countries are sorted from the highest to the lowest points. Our ranking shows large differences between the SIDS, from the high-ranking Dominican Republic with a score of 738 to the lowest scoring islands St. Kitts and Nevis (265), Tuvalu (264), and Nauru (216). Except for a few micronations (Andorra, Monaco, Lichtenstein, and San Marino), the bottom ten countries with poor data coverage in the world are SIDS. If we also exclude South Sudan, Equatorial Guinea, and the Democratic Republic of Korea, all of which are countries with substantially poor state capacity, SIDS make up the twenty most data poor countries in our global comparison.

The outcome for SIDS in the data coverage ranking exercise supports the argument that SIDS generally are struggling to collect the basic statistics to receive proper recognition in the global sustainability debate. The point can also be made by counting research publications. For example, adaptation research, which is central for understanding and reducing the costs of climate change and natural disasters, has been studied only in 26 of the 58 SIDS. Fiji received the most attention, with 12 articles examining the performance of adaptation solutions, while Jamaica had five articles and Kiribati, Samoa, and the Solomon Islands appear in four articles each (Klöck & Nunn, 2019).

For the present study, we identify our cases based on the selection criteria to only include independent island states with a minimum of data coverage for the years 2000- 2018 available from United Nations (SDG dashboard[5]) and

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[3] The list of country members are Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Jamaica, Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines.

[4] Cape Verde, Cuba, Dominican Republic, Haiti, Maldives, Papua New Guinea, Sao Tome and Principe, Tonga, and Vanuatu.

[5] https://dashboards.sdgindex.org/map

World Bank data (World Development Indicators/ World Governance Indicators). This leaves us with 32 of the 58 SIDS affiliated with the United Nations in the last two decades. Henceforth when we discuss the SIDS in our analysis, we refer to this group of 32 purposefully selected countries.

Despite having weeded out the SIDS with the poorest data, we lack full data coverage for our remaining countries. It is primarily the smaller states that have gaps in the data, and the largest omissions are for SDG 12 Responsible consumption and production and government efficiency used as an indicator of SDG 16 Peace and justice and strong institutions. We adjust to these data limitations when deciding on indicators on which to base our analysis of levels of development[6]. We address SDGs 1-16 but exclude goal 17 as we deem the assessment of strengthening the means of implementation and revitalizing the global partnership for sustainable development to be too multi-dimensional for our approach. We select 1-4 indicators per SDG based on both relevance and data availability (for a summary see Appendix, Table 3).

The data points for each SIDS give an average of ten years (2008-2020). This allows us to include more countries than only those with full data coverage over all years. Moreover, studying ten year averages instead of one data point per country provides a fuller picture of how each of the SIDS fare over time. Still, we remain with some important limitations. First, we impose limited precision in our analysis as we do not compare the exact same years for all countries. Second, lack of data in significant areas, for example for SDG 12 Responsible consumption and production, means that we reach conclusions about SIDS's overall performance based on particular goals or indicators only. Still, we make a contribution as our analysis is one of the few studies addressing the Agenda 2030 ambitions with a clear SIDS focus (Jabbari, Motlagh, Ashrafi, & Abdoli, 2019; Van Beynen, Akiwumi, & Van Beynen, 2018).

5. SDG Outcomes in a Comparative Perspective

Our selected SIDS make up a heterogeneous group of countries in terms of GDP per capita levels. According to the World Bank, Haiti and the Comoros are classified as Lower-Income Countries (LIC), the rest are mostly classified as either Low-Middle-Income Countries (LMIC), or Upper-Middle-Income Countries (UMIC), but there are also several High-Income Countries (HIC), especially in the Caribbean. Although the six HICs had a GNI per capita income of US$ 12 696 or more in 2020, there remains a large difference between them and the OECD average of US$ 45 007 in the same year (see Table 1). Due to the substantial difference in socio-economic development levels between the SIDS and the OECD countries and because certain relevant development indicators such as access to clean water and sanitation are not measured for OECD, we compare the SIDS to a constructed Global Average (GA) excluding the OECD.

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[6] For the analysis, we merged the SDG dataset with some of the Word Development Indicators to complement the existing data on SIDS. The World Development indicators included are: poverty headcount ratio at $3.20/day and $5.50/day for SDG1; GDP per capita for SDG8; urban population share for SDG9; Gini coefficients for SDG10, the proportion of urban population living under 5 meters for SDG11; adjusted savings: carbon dioxide damage, consumption of fixed capital, energy depletion, mineral depletion, natural resources depletion, particulate emission damage as % GNI for SDG 12; and tax revenue as % GDP and total debt service as % GNI for SDG 17.

Table 1. SIDS in income groups according to the World Bank classification[7] of 2022

Ocean/GDP	LIC	LMIC	UMIC	HIC
Caribbean	Haiti		Ciba	Antigua & Barbuda
			Dominica	The Bahamas
			Dominican Rep.	Barbados
			Grenada	St. Kitts & Nevis
			Jamaica	Trinidad & Tobago
			St. Lucia	
			St. Vincent	
Pacific		Kiribati	Fiji	
		Micronesia, Fed. Sts.	Marshall Islands	
		Papua New Guinea	Palau	
		Samoa	Nauru	
		Solomon Islands	Tuvalu	
		Vanuatu		
		Timor-Leste		
		Tonga		
AIS	Comoros	Cabo Verde	Maldives	Seychelles
		Sao Tome & Principe	Mauritius	

(LIC- Low Income Countries, LMIC- Lower Middle Income Countries, UMIC- Upper Middle Income Countries, HIC- High Income Countries).

To present our results, we provide tables summarising our values. To enable regional comparisons, we continuously present our 32 SIDS by ocean according to the three UN geographical areas: (i) the Caribbean, (ii) the Pacific, and (iii) the Atlantic, Indian Ocean, and South China Sea (AIS). We fill cells with red if the SIDS' average value is above the GA, and green if it is below. The colour is lighter if the value is within 10 percent above or below the average value of the comparison group. The grey cells indicate that we lack data. For a fuller analysis, we have also conducted comparisons with the other LICs, LMICs, UMICs, and HICs in the world. When relevant, we refer in the text to these additional comparisons that are compiled in the Appendix, Table 4 A-C.

We divide up the analysis into three sub-sections in line with the three dimensions of the sustainable development agenda – (i) Economic – SDGs 8, 9, 10, and 12; (ii) Social – SDGs 1, 2, 3, 4, 5, 7, 11 and 16; and (iii) Environmental – SDGs 6, 13, 14, and 15. In each sub-section we discuss the results in our tables, goal by goal.

5.1 The Economic Dimension

Table 2 below shows our results for the economic dimension. First, to capture qualitative aspects of having access to decent work (SDG 8) can be challenging and therefore, we have opted for a bare minimum measuring to what extent people have a job or not, using the share of the labour force that is unemployed as our indicator[8]. Most Pacific Islands have lower unemployment figures than the average with Tonga reporting having only 1,1 percent unemployed. The highest levels of unemployment are found in the Atlantic and a couple of islands, St. Lucia and St. Vincent and the Grenadines, are at 18-19 percent unemployed. Still, because the level of informality in the SIDS is high, much of the labour market remains uncaptured by the unemployment statistics.

Table 2 also shows the large variation in economic growth (SDG 8) measured as GDP per capita amongst the SIDS and mostly concur with our presentation in Table 1. The discrepancy between the tables is explained by Table 2 showing a ten-year average while Table 1 is the 2022 classification by the World Bank. In relation to GA, countries in the Caribbean together with Palau and Seychelles, most of which are classified as HICs, are above the average.

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[7] The World Bank income classification is based on a measure of national income, or GNI, per capita in current US$ of the previous year calculated using the Atlas method exchange rates. The classifications are updated yearly.

[8] The percentage of the active population (labour force) that is unemployed. The labour force is the total number of people employed and unemployed.

There is no pattern indicating that the national income levels are correlated to size in landmass or population. For example, the small islands of Nauru and Tuvalu with an area of close to 25 square kilometres have a better performance in income per capita than many other SIDS.

The results regarding the relationship between income levels and poor data coverage are mostly as can be expected, but also include some discrepancies. Our ranking in Appendix, Table 2 shows that the small Pacific Island nations have the poorest data availability, and generally their GDP per capita levels are below the GA. The exception is Palau which is data poor but classified as a HIC and has a GDP per capita of almost US$ 11 000. St Kitts and Nevis and Seychelles are other examples of HICs that are data poor. Meanwhile, Haiti, one of our LICs having the second to lowest GDP per capita (US$ 1193), is a country with medium data coverage together with Mauritius, a HIC with US$ 7897 per capita. The Dominican Republic has the highest data ranking, although it is a UMIC well below the GA income.

Moving on to industry, innovation and infrastructure (SDG 9), we can conclude that except for Trinidad and Tobago, the SIDS have low industry value-added, measured as a share of GDP. While SIDS generally do not have an abundance and wealth of land-based natural resources, Trinidad and Tobago has a sizeable petroleum industry, and oil and gas production represented an average of over 60 percent of exports between 1994 and 2018 (GrowthLab, 2022). The results showing the share of the labour force employed in industry are quite mixed with many SIDS close to the GA of 18.7 percent. Unsurprisingly, Trinidad and Tobago is above at 29 percent, but both Mauritius and Tonga also have above GA shares. In the case of Mauritius, this is due to a labour-intensive industrialization and economic upgrading trajectory spearheaded by the long-standing garment industry (Tang, 2019). At the other end of the scale, we find Haiti at 7 percent and Vanuatu at a bare 5.4 percent of the labour force in industry.

Infrastructure is particularly important for the SIDS economies for several reasons. For example, it provides the technologies to overcome remoteness, which functions as a protective tariff on the economy when communication and transportation are high (Pratt, 2015). Also, as the number of disasters increase internet access becomes an important channel to inform and manage the disaster risk reduction plans assigned in most national development plans (Jerez Columbié, 2022; Mackay et al., 2019). While the expansion of internet use has been pervasive, the differences across SIDS reveal that it is higher in the richer Caribbean and the AIS countries than in the Pacific.

For SDG 10 Reduced inequalities, we use the reported GINI as our indicator. The GINI values for all SIDS are rather compressed and most of them for which we have data are found in the medium range compared to the GA. While the GINI measures the relationship between different income groups, it does not tell us anything about poverty reduction or if the overall standard of living is improving for most of the population. At the country level, we see that SIDS in the Caribbean, in general, have a higher GINI than countries in the other two oceanic areas. These countries are also amongst the richest and there are large surpluses that can be unevenly distributed. St Lucia, a HIC in the Caribbean, has the highest GINI of all measured SIDS with an average value of 51.2. Meanwhile, Timor-Leste in the Pacific, a LIC, has the lowest average Gini, 30.8.

Most SIDS have relatively small populations and generally rely on tourism, financial services, external remittances, or the export of natural resources as key engines for the economy. It is not surprising then that, with the exceptions of Trinidad and Tobago, Jamaica, and Palau, SDG 12 Responsible consumption and production measured by adjusted savings in carbon emissions is below the GA. The high result for Trinidad and Tobago is explained by the petroleum industry. The results are more surprising for Jamaica and Palau which have different comparative advantages as Jamaica´s grow trade flows consists to 44 percent of travel and tourism, while Palau´s export relies on fish (60 percent), floating structures for scrapping (10 percent), and computers (10 percent) (GrowthLab, 2022).

Table 2. The economic dimension comparing SIDS to Global Averages (excl. OECD)

	SDG 8		SDG 9				SDG 10	SDG12
	Decent work and economic growth		Industry Innovation and Infrastructure				Reduced Inequalities	Responsible consumption and production
	Unemploy ment (%)	GDP / capita, 2010 US$	Internet use (%)	Employment in Industry (%)	Industry (%) of GDP	Urban population (%)	GINI	Carbon dioxide damage (%) of GNI
Caribbean								
Antigua and Barbuda		13809.8	52.2		16.2	27.4		1.2
The Bahamas	12.7	29716.3	55.0	16.2	11.5	82.4		0.5
Barbados	10.3	16049.2	67.7	18.5	15.0	32.2		0.9
Cuba	2.5	5303.9	21.4	17.8	23.1	76.4		1.3
Dominica		6450.8	49.9		13.2	67.8		0.9
Dominican Republic	5.7	5435.1	36.7	20.5	29.6	71.9	48.0	1.3
Grenada		7461.2	34.2		15.5	35.9		0.9
Haiti	14.7	1193.3	9.4	6.9	24.9	46.3	41.1	0.6
Jamaica	12.5	4818.9	31.7	16.5	20.1	53.6	46.9	2.1
St. Kitts and Nevis		15620.1	60.2		24.1	31.5		0.9
St. Lucia	19.3	8447.0	34.2	17.7	11.8	21.2	51.2	0.8
St. Vincent and the Grenadines	18.3	6132.1	35.3	20.5	15.9	48.6		0.9
Trinidad and Tobago	4.6	14888.2	52.4	29.1	50.2	54.3		6.2
AIS								
Cabo Verde	10.5	3097.3	29.3	22.2	18.5	60.3	47.3	0.9
Comoros	4.4	1323.6	5.1	16.6	11.5	28.1	50.6	0.5
Maldives	4.7	6907.5	34.7	19.7	10.3	35.1	37.0	1.2
Mauritius	7.7	7806.6	33.3	30.3	22.2	41.6	37.0	1.1
Sao Tome and Principe	14.2	1070.1	20.2	18.2	15.3	63.5	39.7	1.3
Seychelles		11239.9	45.7		16.8	53.2	39.45	1.6
Pacific Ocean								
Fiji	7.7	3852.4	26.7	17.9	17.1	51.8	38.4	1.1
Kiribati		1652.3	9.7		11.4	47.2	37.0	0.7
Marshall Islands		2825.6	11.5		12.7	72.9		1.7
Micronesia, Fed. Sts.		2787.0			6.2	22.3	41.2	1.2
Nauru		5743.5	54,0		23.7	100.0	34.8	1.3
Palau		10923.4			10.9	74.2		2.6
Papua New Guinea	2.4	1913.3	3.8	7.5	34.1	13.0	41.9	1.5
Samoa	6.4	3504.1	12.9	22.8	23.1	20.2	40.5	0.9
Solomon Islands	2.0	1539.5	6.1	7.8		19.6	41.6	0.6
Tonga	1.0	3806.3	22.6	30.5	16.7	23.2	37.6	0.9
Tuvalu		3208.9	29.9		8.3	53.8	39.1	0.6
Vanuatu	5.3	2796.1	11.9	5.4	9.3	23.8	37.6	0.5
Timor-Leste	3.9	758.5	8.7	9.7	12.2	27.4	30.8	0.4
Global Average	**8.1**	**8020.0**	**26.9**	**18.7**	**27.3**	**51.3**	**40.6**	**1.97**

5.2 The Social Dimension

Our presentation of results for the social dimension starts with a discussion on the three measures of poverty that we include in Table 3 below. The World Bank defines living on less than US$ 1.90 per day (2011 PPP) as living in extreme poverty. Eight SIDS spread across our three ocean groups have a share of their populations living in extreme poverty that is higher than the 17 percent that is the GA. In the Caribbean, Haiti has a share that is 23 percent. Among the AIS countries, Cabo Verde, Comoros, and Sao Tome, and Principe stand out as having substantially higher shares of the population living on less than US$ 1.90 a day, compared to the other countries in the AIS group. Four counties in the Pacific (Fed. Sts. of Micronesia, Papua New Guinea, Solomon Islands, and Timor-Leste) have rather high shares of the population in extreme poverty with Papua New Guinea having the highest share of all SIDS with 34 percent of the population living on less than US$ 1.90 a day.

We move on to our second poverty line, which is living in moderate poverty on less than US$ 3.20 per day. The same eight countries that had higher rates than GA in terms of extreme poverty also have higher levels of moderate poverty than the GA, but they are now joined by Vanuatu and Kiribati in the Pacific. Papua New Guinea is still the country with the highest poverty numbers with 65.6 percent of the population living in moderate poverty.

The highest poverty line defined by the World Bank is US$ 5.50 per day, indicating that people are vulnerable to

poverty. For this measure, more SIDS are above the GA. Although the countries in the Caribbean in general have a lower share, and are often below the GA. The only Caribbean country with a share of the population living on less than US$ 5.50 per day that is above the GA is Haiti at 78.6 percent. More than half of our Pacific countries have shares that are higher than the GA. Timor-Leste, Solomon Islands, and Papua New Guinea have a share that is above 80 percent.

For SDG2 Zero hunger we display two indicators: percent of stunting (low height for age under the age of five) and percent of wasting (too thin for height). Stunting and wasting are measures capturing malnutrition and/or starvation in a population and we are expecting rather low levels of this in the SIDS as only two of them belong to the LIC group. The highest levels of stunting are found in the Pacific, with Papua New Guinea and Timor-Leste having stunting levels of around 50 percent. In the AIS group, Comoros has a stunting level of 32 percent and in the Caribbean Haiti is the only country with levels of stunting that is above GA. For wasting, we see similar patterns with Papua New Guinea and Timor-Leste having the highest prevalence while other SIDS are doing quite well.

For SDG 3 Good health and well-being, most SIDS have a life expectancy that is above the GA of 66.8 years, although some of the poorer SIDS have somewhat lower life expectancy. Furthermore, most SIDS are performing well in terms of child and maternal mortality. However, for both these two measures certain countries stand out. In the case of maternal mortality, Haiti, Comoros, and Cabo Verde all have maternal mortality rates that are substantially above the GA and for under-five mortality, we see rates above the GA for Haiti in the Caribbean, the AIS countries Sao Tome and Principe and Comoros, and for Kiribati, Papua New Guinea, and Timor-Leste in the Pacific.

Meanwhile, obesity in the adult population is a major issue for many SIDS as their values tend to be higher than the GA. This is true for most countries, but particularly for some of the Pacific Islands. For example, in Nauru and Palau, over 50 percent of the adult population is obese, and in the Marshall Islands, the prevalence is over 48 percent. The obesity problem of Pacific Island nations is a well-known public health concern (Sobers & Samuels, 2019). What is striking in our analysis is that we see obesity levels that stand out also in the Caribbean, with most countries (except Trinidad and Tobago) having obesity rates that are higher than the GA. Meanwhile, all AIS countries have rates below the GA in this indicator. When comparing the obesity rates of the SIDS (in particular the Pacific Islands) to the LICs, the difference is striking, and it is upheld also in relation to the LMIC (see Appendix, Table 4 B). The obesity rate for LICs is 5.69 percent and all SIDS, except the Maldives and Timor-Leste, have higher rates than the average LICs.

The final measurement is vaccine coverage, denoted by the share of infants receiving WHO vaccines. For this indicator, there is a clear difference between the different oceans, as the lowest vaccine coverage is found in the Pacific where most countries also have coverage that is below the GA.

Moving on to SDG 4 Quality education, measured by mean years of schooling, we learn that the SIDS are doing rather well. SIDS in the Caribbean, excluding Haiti and Sao Tome and Principe, have the highest average years of schooling. The SIDS in the AIS still have a way to go to improve their results to reach the GA, except for Mauritius and Seychelles that are also the richest countries in the group. The SIDS in the Pacific do well, but their poorest members – Papua New Guinea, Solomon Island, and Timor-Leste – have a mean below the GA.

The next area of interest is gender equality (SDG 5). Female labour force participation, measured as a share of male labour participation, is below the GA of 67.9 percent in 12 countries in the sample. In the countries below average, it ranges from 48 percent in Timor-Leste to 67.7 percent in Comoros. The highest number for the countries above the GA is Papua New Guinea where female labour force participation is 96.4 percent or almost equal to that of their male counterparts. In terms of women in national parliament, the SIDS generally score under the GA of 15.3 percent, but the span is wide. In the Federal States of Micronesia, it appears that there are no women in parliament at all which is striking, while in Cuba, the share of women in parliament is 40.4 percent. The overall result that the SIDS score poorly in gender equality stays more or less the same independently of the income group we compare with.

Table 3. The social dimension comparing SIDS to Global Averages (excl. OECD)

	SDG 1 No poverty			SDG 2 Zero Hunger		SGG 3 Good Health and Well-Being					SDG 4 Quality Education	SDG 5 Gender Equality			SDG 7 Affordable and Clean Energy		SDG 11 Sustainable cities and communities		SDG 16 Peace and justie and strong institutions		
	Poverty at $1.90/day (%)	Poverty at $3.20/day (%)	Poverty at $5.50/day (%)	Stunting, under-5 (%)	Wasting, under-5 (%)	Life Expectancy	Maternal mortality /100.000	Under 5 mortality /1000	Adult obesity (%)	WHO vaccines, infants(%)	Mean years of schooling	Female LFP (% male)	Women in parliament (%)	Adolescent fertility /1,000	Access to clean fuels (%)	Access to electricity (%)	Water sources, piped (%)	Urban population <5m	Corruption Perception (100)	Rule of Law	Tax revenue (% GDP)
Caribbean																					
Antigua and Barbuda	2.1			7.0	2.3	75.0		10.2	15.5	98.3	8.5		9.4	54.6	99.5	94.2		8.6		71.5	
Bahamas, The	1.9			6.8	2.3	74.2	80.8	13.5	27.6	92.0	10.9	85.4	14.6	37.9	100.0	99.6		11.7	68.8	72.8	
Barbados	1.5			7.2	5.3	74.6	32.7	13.9	18.9	90.0	9.5	86.3	12.8	46.8	98.0	100.0		0.4	70.8	79.8	
Cuba	2.5			7.6	2.2	78.4	41.1	6.0	20.8	97.6	10.5	58.8	40.4	49.1	82.7	99.9	84.0	1.4	46.8	24.0	
Dominica				8.5	2.6	76.6		24.1	23.4	96.3	7.8		16.6		89.1	95.6		0.5	58,0	67.5	23.4
Dominican Republic	1.2	11.5	29.8	9.4	2.5	72.3	90.3	33.9	21.6	84.3	7.1	62.6	19.9	105.0	89.3	97.8	85.2	0.4	31,0	30.6	13.2
Grenada	4.5			8.9	2.5	72.1		26.2	15.0	95.1	8.5		24.8	41.7	98.5	88.5		0.5	54,0	57.6	18.8
Haiti	23.0	50.3	78.6	22.9	5.4	60.5	401.0	88.9	16.4	59.7	4.5	85.4	3.9	45.9	8.1	36.6	45.1	0.7	19.3	6.4	
Jamaica	1.0	10.1	31.45	7.1	2.3	74.2	91.8	17.8	20.1	90.7	9.2	72.7	13.2	70.8	88.1	93.5	93.8	2.2	39.6	41.3	24.5
St. Kitts and Nevis						71.3		12.1	18.3	95.6	8.1		8.1		100.0	98.4		1.9		67.4	
St. Lucia			19.9	3.2	2.9	73.7	54.8	15.2	16.0	96.1	8.1	76.8	12.7	48.5	96.6	95.8	97.2	0.8	65.6	69.2	
St. Vincent and the Grenadines	5.6			9.9	2.7	71.8	48.6	19.9	18.9	97.5	8.1	69.2	16.5	58.5	98.9	94.0		0.6	60.8	69.7	23.0
Trinidad and Tobago	0.3			1.5	4.0	69.5	63.4	22.0	14.4	89.2	10.3	68.2	24.9	36.4	99.9	99.1		1.9	38.3	50.5	
AIS																					
Cabo Verde	19.0	26.8	52.8	12.2	4.5	71.7	51.4	25.4	8.9	93.2	4.1	61.6	16.9	88.9	67.7	81.2	86.3	3.5	57.3	63.0	19.8
Comoros	21.5	38.6	64.6	32.2	10.8	61.3	385.6	86.9	5.8	82.5	3.9	67.7	3.0	80.3	5.1	65.1	80.4	0.1	26.5	15.2	
Maldives	4.1	12.1	34.5	20.9	10.1	74.8	84.0	13.6	5.3	97.8	4.3	60.6	7.4	15.4	88.1	97.8			34.5	40.5	12.2
Mauritius	0.3	3.0	17.2	10.4	11.4	72.9	49.9	15.1	8.6	97.3	7.7	56.1	13.4	32.4	97.1	99.1	99.8	0.6	53.3	75.5	17.0
Sao Tome and Principe	28.5	67.9	89.9	21.7	6.6	65.2	165.8	45.5	9.2	91.8	4.7	52.9	12.6	105.9	27.3	60.3	89.2	1.1	43.3	31.6	16.0
Seychelles	1.0	2.1	6.1	8.9	4.6	72.9		14.3	11.1	97.8	8.1		30.5	59.3	95.9	97.7		2.4	55.2	55.2	
Pacific Ocean																					
Fiji	0.9	10.9	38.5	6.4	5.9	68.9	34.4	23.4	25.4	94.0	9.6	52.4	10.6	43.3	35.3	94.6	97.1	2.9		36.6	23.6
Kiribati	13.3	34.6	69.4	19.8	8.9	65.2	110.2	61.0	40.7	83.1	7.6		6.1	26.2	3.9	54.4	61.7	1.7		59.7	19.8
Marshall Islands				14.3	5.8	65.3		38.4	48.4	80.6			4.0		39.1	84.2	15.1			50.3	17.0
Micronesia, Fed. Sts.	28.6	31.7	60.4			68.3	115.2	39.6		79.4			25.0		22.5	65.2	41.8	2.8		53.2	5.8
Nauru		13.2	43.0					38.1	58.1	93.2			1.9			99.3	68.4	0.9		54.1	
Palau						69.8		19.1	50.2	80.1	11.8		0.69		57.4	98.6	98.3	1.0		69.0	17.8
Papua New Guinea	34.3	65.6	86.9	49.2	13.4	63.9	242.0	64.0	17.1	71.5	3.7	96.3	1.4	60.1	26.9	18.3	70.8	0.1	26.1	19.6	15.6
Samoa	0,1	10.3	35.5	7.2	2.3	72.3	63.7	19.1	42.1	56.4	9.6	60.2	6.7	31.6	27.0	96.2	86.7	1.1		71.6	21.8
Solomon Islands	26.7		86.5	34.2	4.8	67.4	137.2	27.7	17.7	88.8	4.9	78.0	0.8	60.3	8.4	28.3	72.6	1.0	40.5	30.9	29.8
Tonga	0,5	8.1	29.1	8.5	5.6	71.9	126.0	17.0	42.6	81.0	10.0	60.5	1.8	18.4	60.3	92.4	91.0	2.9		54.2	
Tuvalu		17.6	46.7					30.4	45.4	91.7			2.7		28.0	97.3	97.5			72.7	
Vanuatu	13.3	39.4	72.4	24.4	5.0	70.0	95.1	28.7	20.2	52.8	6.6	77.4	1.7	48.4	15.3	31.4	73.2	0.3	43,0	59.3	16.5
Timor-Leste	21.9		92.9	50.6	16.4	65.3	336.5	63.1	2.4	70.6	3.7	47.9	31.7	60.5	3.9	40.0	55.9	0.1	32,0	17.6	84.5
Global Avergae	17.1	24.7	42.7	21.8	6.59	66.8	242.9	45.2	15.4	84.2	6.9	67.9	15.3	65.35	54.7	73.1	78.7	3.2	36,0	37.2	17.0

Turning to affordable and clean energy (SDG 7), it is recognised in the literature that SIDS generally, and the Pacific specially, suffer from energy poverty (Dornan, 2014). In addition, we show clear differences between our three geographical areas regarding access to clean energy. Compared with GA, the countries of the Caribbean have more access to clean fuels than their counterparts in the Pacific, where most countries have a lower mean than the GA.

Regarding peace, justice, and strong institutions (SDG 16), we see that the Corruption Perception Index is rather high in most of the SIDS, although there are differences within the group. For example, Barbados scores 70.8 in the index, while Haiti has a value of only 19.3. This is a somewhat puzzling result considering what we know about the overall state capacity of the two countries. We added data from the World Bank on Rule of Law. It captures the extent to which agents have confidence in and abide by the rules of society. The World Bank data consist of multiple indicators on e.g. property rights, crime, and law and order. The GA of this indicator is 37.2 on a scale of 100 and the majority of SIDS is above the GA.

5.3 The Environmental Dimension

The third and final part of the analysis is the environmental dimension (see Table 4). First, access to basic water and sanitation (SDG 6) shows overall positive results, although SIDS are doing better with access to clean drinking water than with sanitation. While the achievements are mixed, they to some extent correlate with the income levels of the different countries. Countries that are below GA in access to sanitation are all classified as LICs or LMICs. The exception is Samoa, which is a LMIC but with the highest score of all providing sanitation to 97.3 percent of its population. Regarding drinking water, almost half or 14 countries provide it to well above 90 percent of their populations, and Mauritius and Tonga score above 99 percent. The Caribbean SIDS generally tend to have better access to drinking water than the countries of the Pacific, and only one country in the Caribbean, Haiti which is a LIC with 45 percent access rate, is below the GA. Meanwhile, four LMIC countries in the Pacific (Kiribati, Papua New Guinea, Solomon Islands, and Timor-Leste) have lower access rates than the GA.

The SIDS turn out rather well in terms of SDG 13 Climate action, which we measure based on CO_2 emissions from energy. Considering that SIDS are developing countries with low levels of industrialisation, this is an expected

result. If we compare the SIDS with HICs, only two countries, Trinidad and Tobago in the Caribbean and Palau in the Pacific, have values higher than the HIC average of 10.6 tCo2/Capita. Because of its petroleum industry, Trinidad and Tobago has exceptionally high emissions and stand out with 33.8 tCo2/Capita.

All SIDS are highly dependent on their marine resources and most of them, especially the Pacific Islands, have large ocean territories. It is thus an expected result that these island states come out well in terms of SDG 14 Life below water when compared to the GA which includes countries that have short shorelines or are even land-locked. The Pacific countries moreover have higher values in terms of Ocean health /Fisheries, which also might be related to the larger marine areas of the Pacific compared to the Caribbean in particular. The future sustainable exploitation and preservation of the marine environment, the Blue Economy, constitutes an enormous opportunity and challenge to the SIDS.

Finally, we have previously alluded to the small landmass of the islands, and it is therefore not surprising that SIDS come out primarily below the GA for terrestrial sites and mean protected areas as well as in the Red list index of land species survival (SDG 15). There are six countries spread over the three oceans[9] that score better than GA, but it is difficult to find specific or principal explanations for their results. The overall result of scoring poorly remains strong independent of what group of countries we compare with.

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[9] Antigua and Barbuda, Barbados, Cabo Verde, Maldives, papua New Gunea, and Timor-Leste.

Table 4. The environmental dimension comparing SIDS to Global Averages (excl. OECD)

| | SDG 6 | | SDG 13 | SDG 14 | | | SDG15 | |
| | Clean water and Sanitation | | Climate action | Life below water | | | Life on Land | |
	Basic sanitation (%)	Basic drinking water (%)	CO2 , energy (tCO2/capita)	Ocean health - Biodiversity (100)	Ocean health - Waters (100)	Ocean health - Fisheries (100)	Terrestrial sites, protected areas	Red list, species survival (0-1)
Caribbean								
Antigua and Barbuda			5.2	92.4	63.5	32.4	19.0	0.90
Bahamas, The			5.2	91.4	64.3	67.7	9.8	0.71
Barbados			5.2	91.0	67.3	16.5	2.1	0.92
Cuba		94.7	2.8	87.3	63.0	40.5	63.3	0.66
Dominica	76.9	96.2	1.8	78.2	65.7	28.4	44.3	0.69
Dominican Republic	82.1	93.8	2.1	93.0	50.7	48.8	72.6	0.74
Grenada	88.9	95.6	2.4	81.6	67.2	40.9	35.9	0.76
Haiti	28.0	62.7	0.2	83.3	42.9	39.7	5.4	0.73
Jamaica	85.1	92.5	3.1	86.4	43.1	25.6	22.0	0.73
St. Kitts and Nevis			4.3	94.0	59.1	25.5	29.2	0.74
St. Lucia	88.7	96.1	2.3	86.4	58.6	37.7	45.2	0.86
St. Vincent and the Grenadines	84.1	94.8	2.1	94.1	63.0	40.5	42.6	0.77
Trinidad and Tobago			33.8	93.8	60.2	26.3	40.6	0.82
AIS								
Cabo Verde	60.1	84.4	1.0	97.1	61.3	28.1	2.7	0.87
Comoros	32.7	84.2	0.2	87.7	45.7	55.9	13.7	0.79
Maldives	95.2	97.9	2.6	91.3	64.1	65.7	0.0	0.87
Mauritius	92.9	99.8	3.1	93.3	64.9	38.7	25.2	0.44
Sao Tome and Principe	35.6	76.8	0.6	95.9	59.1	28.9	50.2	0.79
Seychelles			6.2	93.0	76.1	40.8	21.8	0.69
Pacific Ocean								
Fiji	91.8	94.0	1.3	85.7	74.7	51.3	6.9	0.68
Kiribati	38.7	63.9	0.6				62.8	0.78
Marshall Islands	86.6	78.4	1.9	90.0	69.0	75.1	32.1	0.85
Micronesia, Fed. Sts.	68.4	88.8	1.27	91.3	62.3	83.2	0.0	0.71
Nauru			4.4	80.2	51.1	94.5		0.79
Palau		98.3	12.5	87.7	75.6	86.0	28.6	0.81
Papua New Guinea	18.6	36.6	0.7	86.2	65.2	83.7	7.3	0.86
Samoa	97.3	95.0	0.9	93.1	88.3	66.2	17.5	0.82
Solomon Islands	28.5	69.1	0.4	84.5	69.7	88.7	9.1	0.79
Tonga	92.2	99.5	1.1	92.4	66.5	34.9	11.3	0.72
Tuvalu		98.8	0.9	91.9	69.2	85.9		0.85
Vanuatu	53.4	87.8	0.4	90.5	69.1	51.6	6.4	0.69
Timor-Leste	41.1	65.2	0.2				34.5	0.91
Global Avergae	**56.4**	**75.3**	**3,7**	**88.1**	**56.5**	**45,5**	**37.2**	**0.86**

6. Conclusion

The SIDS' collaboration towards a sustainable future can be traced back to the group's establishment 30 years ago and pre-dates the Agenda 2030 efforts. Due to the recognition by the UN as an entity and by virtue of standing at the frontline experiencing the repercussions of climate change, they receive relatively substantial attention from the international community despite generally being small states in terms of population size and landmass. From the onset, the group has faced the challenge of finding common ground while being a highly heterogeneous group. In this study, we contribute new knowledge by mapping SIDS' performance in relation to the SDGs, but more research is needed to understand better the commonalities and differences of SIDS on which to base country specific development policies.

We first investigated the data availability. Collecting official statistics is a costly exercise and requires countries to have the infrastructure and capacities to produce statistics that are reliable and of high quality. Of the 32 independent island states included in our study, 28 were categorised as 'poor data coverage' in our ranking exercise.

Further, together with a few failed states, SIDS make up the twenty most data poor countries in the world. We both confirmed an existing perception and provided new insights into the magnitude of the data poverty problem. We adjusted to this challenge by studying averages over ten years, and by being flexible when selecting the indicators per SDG, which we organised according to the three dimensions of sustainable development – economic, social, and environmental.

The SIDS are by definition developing countries and it is therefore expected that they are flawed in the economic dimension. However, the range of incomes is wide from the LICs Haiti and Comoros to HICs such as The Bahamas with almost US$ 30 000 per capita (US$ 2010) and Mauritius which is considered one of the African growth miracles. More in-depth studies could tease out what the poorer SIDS can learn in terms of opportunities for productive activities from their HIC counterparts. Also, with the exception of Trinidad and Tobago, SIDS have low levels of industrialization, but a sustainable future requires all economies in the world to renounce brown industries and instead develop so called 'industry without smokestacks', and to re-define what are 'industrial jobs'. The SIDS who are not burdened with brown industry can instead aim for green industrialization while preserving their positive result for SDG 12 Responsible consumption and production.

In the social dimension, the SIDS mostly come out as could be expected by developing countries. While results for education are relatively positive, substantial work remains to be done regarding health and two challenges stand out. The most striking finding is the extent to which the SIDS group as a whole performs badly in terms of adult obesity. This is generally the case for 23 SIDS across all three ocean groups when compared to the GA and the result holds for 11 SIDS even when we compare to the HICs. Further, a very clear and negative result is the poor performance generally when it comes to gender equality, especially when measured using the share of women in national parliaments as the indicator. Achieving better gender equality is something that the SIDS can address independently of their progress with other development ambitions.

Finally, the SIDS overall come out reasonably well in the environmental dimension which is not surprising considering that poor countries generally leave a smaller ecological footprints than richer ones, and especially considering their low levels of industrialisation. The most negative outcome is for SDG 15 Life on land which can be explained by their limited landmass. Meanwhile, the SIDS score high in ocean biodiversity and health, but ocean fish stocks seem to be mostly concentrated on the Pacific rather than the Caribbean, where the distance to the continent is much lower. Focusing on ocean territories and marine resources exposes the SIDS' potentially greatest future opportunities – to develop a sustainable Blue Economy-led pathway towards socio-economic development.

Based on our broad mapping of SDG performance, we suggest four concrete policy recommendations. First, it is urgent that SIDS further develop their statistical capacity to enable more in-depth understanding of their individual development performance and potential for collaborations. Second, several SIDS, especially in the Pacific, urgently need to address adult obesity to improve the health status of their populations. Third, the work of promoting gender equality needs to be lifted as a prioritised area. Finally, all SIDS have a window of opportunity to push their development of Blue Economy activities.

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Appendix

Table 1. List of SIDS divided up by ocean

UN MEMBERS (38)		
Atlantic, Indian Ocean and South China Sea (AIS) (9)		
Bahrain	Cabo Verde	Comoros
Guinea-Bissau	Maldives	Mauritius
Sao Tomé and Principe	Seychelles	Singapore
Caribbean (16)		
Antigua and Barbuda	Bahamas	Barbados
Belize	Cuba	Dominica
Dominican Republic	Grenada	Guyana
Haiti	Jamaica	Saint Kitts and Nevis
Saint Lucia	Saint Vincent and the Grenadines	Suriname
Trinidad and Tobago		
Pacific (13)		
Fiji	Kiribati	Marshall Islands
Micronesia	Nauru	Palau
Papua New Guinea	Samoa	Solomon Islands
Timor-Leste	Tonga	Tuvalu
Vanuatu		
NON- UN MEMBERS/ASSOCIATE MEMBERS OF REGIONAL COMMISSIONS (20)		

American Samoa	British Virgin Islands	U.S Virgin Islands
Bermuda	Cook Islands	Cayman Islands
Northern Marianas	French Polynesia	Curacao
Guam	Martinique	Guadeloupe
New Caledonia	Niue	Montserrat
Sint Maarten	Turks and Caicos Islands	Puerto Rico
Anguilla	Aruba	

Non island states marked in grey.

Table 2. SDG Data coverage ranking (SIDS are in bold)

(Countries are assigned points to each available indicator; 2 points per year for data available after 2010, and 1 point per year for data before 2010)

3. POOR DATA COVERAGE		2. MEDIUM DATA COVERAGE		1.　GOOD DATA COVERAGE	
Bahrain	**650**	Nicaragua	738	United Kingdom	1005
Oman	649	**Dominican Republic**	**738**	Finland	992
Rwanda	648	Costa Rica	738	Italy	984
Syrian Arab Republic	643	Senegal	738	Belgium	980
Togo	643	Romania	737	Sweden	980
Suriname	638	Malaysia	737	Denmark	980
Congo, Rep.	638	Venezuela, RB	735	Portugal	978
Burundi	638	Uruguay	731	United States	977
Congo, Dem. Rep.	635	Albania	728	Poland	975
Lao PDR	632	Panama	726	Spain	971
Qatar	631	Mauritania	725	Ireland	971
Cabo Verde	**629**	Malta	724	Mexico	967
Lesotho	628	Ghana	724	Norway	965
Iraq	625	Iran, Islamic Rep.	723	Netherlands	963
Trinidad and Tobago	**624**	Mozambique	723	Germany	962
Belize	**617**	Madagascar	723	Greece	959
Guyana	615	Benin	723	Latvia	957
Brunei Darussalam	606	Ecuador	722	France	955
Belarus	606	Nigeria	721	Estonia	954
Niger	604	China	713	Slovenia	952
Uzbekistan	603	Cote d'Ivoire	712	Israel	949
Afghanistan	597	Namibia	710	Canada	939
Bhutan	591	Sierra Leone	710	Turkey	931
Djibouti	587	**Mauritius**	**706**	New Zealand	927
Sao Tome and Principe	586	Algeria	706	Australia	925
Swaziland	582	Tunisia	706	Japan	925
Timor-Leste	582	Kazakhstan	705	Czech Republic	919
Sudan	578	Mali	703	Korea, Rep.	919

Cuba	**569**	Morocco	703	Hungary	904
Maldives	**565**	Montenegro	703	Chile	902
Libya	564	Azerbaijan	700	Slovak Republic	898
Central African Republic	562	Yemen, Rep.	700	Iceland	891
Barbados	**562**	Mongolia	699	Luxembourg	870
Papua New Guinea	**559**	Nepal	695	Austria	867
Comoros	**559**	Guinea	693	Switzerland	840
Somalia	557	Saudi Arabia	692	El Salvador	778
Eritrea	557	Zambia	692	Indonesia	775
Fiji	**545**	Kyrgyz Republic	691	Sri Lanka	767
Turkmenistan	545	Paraguay	690	Thailand	766
Solomon Islands	**544**	Zimbabwe	688	Guatemala	762
St. Vincent and the Grenadines	**544**	Armenia	688	India	762
Vanuatu	**543**	Botswana	685	South Africa	762
Korea, Dem. Rep.	542	Cyprus	685	Lithuania	760
Guinea-Bissau	535	Jordan	685	Brazil	758
Equatorial Guinea	529	Gabon	684	Ukraine	757
St. Lucia	**527**	Moldova	683	Cambodia	756
Samoa	**517**	Lebanon	682	Georgia	755
Tonga	**495**	Kuwait	677	Cameroon	754
Grenada	483	Chad	677	Pakistan	754
Bahamas, The	**481**	Burkina Faso	676	Philippines	754
South Sudan	445	Bolivia	676	Kenya	752
Kiribati	**442**	United Arab Emirates	675	Vietnam	752
Antigua and Barbuda	**435**	Malawi	675	Russian Federation	751
Seychelles	**431**	**Jamaica**	**672**	Tanzania	751
Dominica	**401**	Bosnia and Herzegovina	672	Peru	750
Micronesia, Fed. Sts.	**384**	Uganda	670	Colombia	750
Marshall Islands	**351**	Angola	670	Croatia	748
Palau	**305**	Tajikistan	669	Argentina	747
Andorra	299	Singapore	669	Bangladesh	747
St. Kitts and Nevis	**265**	Liberia	666	Egypt, Arab Rep.	744
Tuvalu	**264**	Myanmar	666	Bulgaria	742
Monaco	249	**Haiti**	**664**	Honduras	741
Nauru	216	Gambia, The	662		
Liechtenstein	184	Former Yugoslav Republic of Macedonia (FYROM)	661		
San Marino	175	Serbia	660		
		Ethiopia	659		

Table 3. SDGs 1-16 and selected indicators – a summary

SDG	Selected indicators
SDG 1 – No poverty.	Poverty headcount ratio at $1.90/day (%)
	Poverty headcount ratio at $3.20/day (%)
	Poverty headcount ratio at $5.50/day (%)
SDG 2 – Zero hunger	Prevalence of stunting, under-5 (%)
	Prevalence of wasting, under-5 (%)
	Life Expectancy at birth
SDG 3 – Good health and well-being	Maternal mortality (per 100.000 live births)
	Under 5 mortality (per 1000 live births)
	Prevalence of adult obesity (%)
	Infants who receive WHO vaccines (%)
SDG 4 – Quality of education	Mean years of schooling (years)
SDG 5 – Gender equality	Female labor force participation (% male)
	Women in national parliaments (%)
	Adolescent fertility (births year per 1,000)
SDG 6 – Clean water and sanitation	Population using at least basic sanitation (%)
	Population using at least basic drinking water (%)
SDG 7 – Affordable and clean energy	Access to clean fuels (%)
	Access to electricity (%)
SDG 8 – Decent work and economic growth	Unemployment rate (%)
	GDP / capita (Constant 2010 US$)
SDG 9 – Industry innovation and infrastructure	Internet use (%)
	Employment in Industry (%) of total employment
	Industry value added (%) of GDP
	Share urban population (%)
SDG 10 – Reduced inequalities	GINI
SDG 11 – Sustainable cities and communities	Improved water sources, piped (%)
	Urban population under 5m
SDG 12 – Responsible consumption and production	Adjusted savings carbon dioxide damage (%) of GNI
SDG 13 – Climate action	CO2 emissions from energy (tCO2/capita)
SDG 14 – Life below water	Ocean health Index- Biodiversity (1-100)
	Ocean health Index- Clean waters (1-100)
	Ocean health Index- Fisheries (1-100)
SDG 15 – Life on land	Terrestrial sites, mean protected areas
	Red list Index of species survival (0-1)
SDG 16 – Peace and justice and strong institutions	Corruption Perception Index (0-100)
	Government efficiency (-7)
	Rule of law
	Tax revenue (% GDP)

Table 4 A. The economic dimension (LICs, LMICs, UMICs and HICs)

	SDG 8		SDG 9				SDG 10	SDG12
	Decent work and economic growth		Industry Innovation and Infrastructure				Reduced Inequalities	Responsible consumption and production
	Unemployment (%)	GDP / capita, 2010 US$	Internet use (%)	Employment in Industry (%)	Industry (%) of GDP	Urban population (%)	GINI	Carbon dioxide damage (%) of GNI
Low- income countries	5.82	672.0	5.05	19.3	9.5	31.6	41.4	0.92
Lower-middle-income countries	7.4	1945	16.9	26.4	17.4	42,0	38.5	2.1
Upper-middle-income countries	10.5	6536	33.6	29.9	22.1	62,0	43.2	2.2
High-income countries	7.2	36861	69.7	28,0	25.2	75.4	32.2	1.23

Table 4 B. The social dimension (LICs, LMICs, UMICs and HICs)

	SDG 1			SDG 2			SGG 3				SDG 4
	No poverty			Zero Hunger			Good Health and Well-Being				Quality Education
	Poverty at $1.90/day (%)	Poverty at $3.20/day (%)	Poverty at $5.50/day (%)	Stunting, under-5 (%)	Wasting, under-5 (%)	Life Expectancy	Maternal mortality / 100.000	Under 5 mortality / 1000	Adult obesity (%)	WHO vaccines, infants(%)	Mean years of schooling
Low- income countries	46.37	78.13	91.79	35.8	10.13	56.68	618.95	96.35	5.69	72.71	3.39
Lower-middle-income countries	16.2	32.3	57.8	27.7	7.7	65.62	232	49.8	13.3	82.4	6.3
Upper-middle-income countries	5.13	12.5	28.5	13.5	4.5	71	86.1	25.6	19.9	88.7	8.5
High-income countries	0.47	0.82	2.2	3.9	2.1	77.9	12.8	7.1	20.9	93.8	10.6

	SDG 5			SDG 7		SDG 11		SDG 16		
	Gender Equality			Affordable and		Sustainable cities and		Peace and justie and strong		
	Female LFP (% male)	Women in parliament (%)	Adolescent fertility / 1,000	Access to clean fuels (%)	Access to electricity (%)	Water sources, piped (%)	Urban population < 5m	Corruption Perception (100)	Rule of Law	Tax revenue (% GDP)
Low- income countries	82.2	17.65	112.4	6.79	24.73	63.75	2.71	27.07	20.14	14.29
Lower-middle-income countries	63.7	13	62.4	41.7	69.1	74.4	2.1	27.07	20.14	14.29
Upper-middle-income countries	64,0	16.8	52.9	77.2	93.2	89.1	2.98	38.1	39.5	17.5
High-income countries	73,0	20.5	18.2	99.2	99.7	98.1	5.5	66.4	76.1	N.a.

Table 4 C. The environmental dimension (LICs, LMICs, UMICs and HICs)

	SDG 6		SDG 13	SDG 14			SDG15	
	Clean water and Sanitation		Climate action	Life below water			Life on Land	
	Basic sanitation (%)	Basic drinking water (%)	CO2 , energy (tCO2/capita)	Ocean health - Biodiversity (100)	Ocean health - Waters (100)	Ocean health - Fisheries (100)	Terrestrial sites, protected areas	Red list, species survival (0-1)
Low- income countries	26.43	57.35	0.25	83.48	48.76	39.59	44.59	0.87
Lower-middle-income countries	57.8	76.8	1.2	88.4	53.3	46.8	14.29	0.85
Upper-middle-income countries	81.1	89.4	4.2	88.9	60.6	46.7	36.9	0.85
High-income countries			10.6	90.7	60.3	51.4	52.8	0.89

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