Village on South Tarawa atoll, Kiribati. Credit: Dmitry, Adobe Stock.

1

The state of island economies and development in 2022

ABSTRACT

This chapter reviews and updates the analysis and discussion in a similar chapter of the 2021 Annual Report on Global Islands. In the spirit of the previous publications, each of the data tables (the majority of which were updated for 2022) is analyzed, and an attempt is made to interpret this data from social, economic, and environmental perspectives. In other words, the information in the chapter will focus on sustainable development. This year we have maintained the introduced change of "showing change over longer time periods."

JOHN N. TELESFORD
T. A. Marryshow Community College, Grenada and the Institute of Island Studies, Canada

TIANXIANG ZHOU
University of Prince Edward Island, Canada

In this regard, the newly added columns to many of the tables were kept. Additionally, many comparative examples will be used to illuminate some key trends in the statistics over the last few reports.

The world is slowly creeping out of the COVID-19 pandemic that reaped havoc on the global economies—and not sparing many island states and jurisdictions. In fact, the theme chosen for this year's report focuses on and to some extent builds on the 2020 and 2021 reports. In this regard, food security and its tight linkage to agriculture and fisheries and the developmental prospects offered by the blue economy for islands are critical post-COVID-19 themes. Additionally, and concomitant with these sectors, which are crucial for the islands' sustainable development is meeting their commitments to the sustainable development goals (SDGs). In fact, many of these SDGs, such as SDG 1: end poverty, SDG 2: zero hunger, SDG 3: good health and well-being; SDG 6: clean water and sanitation, and SDG 14: life below water, are all dependent on agriculture and the blue economy.

SECTION 1: ISLAND STATES

In 2022, the *Annual Report on Global Islands* continues to feature and gather data for 48 island states, grouped into five regions: Asia, Europe, Africa, Oceania, and the Caribbean/Americas. This first section on small islands is divided into the following sub-sections that highlight the key indicators and factors of social, economic, and environmental features and that are aligned with the tables. The sub-sections are population, social and environmental development (Tables 1.1, 1.2, 1.3, 1.12); socio-economic development (1.4, 1.5, 1.6); Human Development and Happiness (Table 1.7); Globalization, inflation, investment, and innovation (Tables 1.8, 1.9, 1.10 and 1.11); and migration and trade (Tables 1.12 and 1.13). The second section will focus on a number of subnational island jurisdictions, which includes Tables 1.14 to 1.19.

TABLE 1.1: Population, Population Density, and Average Annual Population Growth Rate, 2010 to 2022

Continent	Island Country	Population in 2022	Population density (people/km^2) 2020	Population in 2010	Population Growth Rate (%) 2010-2022
Asia	Japan	124,214,766	345	128,070,000	-3.01%
	Singapore	5,921,231	8019.474	5,076,732	15.55%
	Indonesia	277,329,163	145.684	241,834,226	14.68%
	Timor-Leste	1,445,006	88.665	1,093,517	32.14%
	Brunei Darussalam	478,054	83.014	388,634	23.01%
	Philippines	114,597,229	367.512	93,966,784	21.96%
	Sri Lanka	23,187,516	354.309	20,261,738	14.44%
	Maldives	390,164	1801.807	365,730	6.68%
	Bahrain	1,540,558	2181.517	1,240,864	24.15%

Continent	Island Country	Population in 2022	Population density (people/km^2) 2020	Population in 2010	Population Growth Rate (%) 2010-2022
Europe	Cyprus	1,295,102	130.667	1,112,617	16.40%
	Iceland	357,603	3.634	318,041	12.44%
	United Kingdom	67,791,400	277.83	62,766,365	8.01%
	Ireland	5,275,004	72.503	4,560,155	15.68%
	Malta	464,186	1641.516	414,508	11.98%
Africa	Cabo Verde	596,707	137.962	492,644	21.12%
	Madagascar	28,172,462	47.595	21,151,640	33.19%
	Seychelles	97,017	214.048	89,770	8.07%
	Mauritius	1,308,222	623.517	1,250,400	4.62%
	Comoros	876,437	467.273	689,696	27.08%
	São Tomé and Príncipe	217,164	228.293	180,372	20.40%
Oceania	New Zealand	5,053,004	19.309	4,350,700	16.14%
	Papua New Guinea	9,593,498	19.757	7,310,512	31.23%
	Solomon Islands	702,694	24.54	527,861	33.12%
	Vanuatu	308,043	25.197	236,216	30.41%
	Fiji	943,737	49.066	859,816	9.76%
	Tonga	105,517	146.801	103,981	1.48%
	Samoa	206,179	70.11	185,944	10.88%
	Nauru	9,811	541.7	10,009	-1.98%
	Micronesia, Fed. States	101,009	164.316	102,916	-1.85%
	Marshall Islands	79,906	328.856	56,361	41.78%
	Kiribati	114,189	147.464	102,930	10.94%
	Tuvalu	11,544	393.067	10,521	9.72%
	Palau	21,695	19.012	17,954	20.84%
	Cook Islands	8,128	–	–	–
	Niue	2,000	–	–	–
Caribbean/	Cuba	11,008,112	109.12	11,225,833	-1.94%
Americas	Haiti	11,334,637	413.735	9,949,318	13.92%
	Dominican Republic	10,694,700	224.548	9,695,117	10.31%
	Jamaica	2,818,596	273.422	2,810,464	0.29%
	Bahamas, The	355,608	39.286	354,936	0.19%
	St. Kitts and Nevis	54,488	204.585	49,011	11.18%
	Antigua and Barbuda	100,335	222.564	88,030	13.98%
	St. Vincent and the Grenadines	100,969	284.479	108,260	-6.73%
	St. Lucia	167,122	301.031	174,092	-4.00%
	Grenada	113,949	330.938	106,227	7.27%
	Barbados	302,674	668.305	282,131	7.28%
	Trinidad and Tobago	1,405,646	272.805	1,328,144	5.84%
	Dominica	74,629	95.988	70,877	5.29%

Population, social and environmental development

Tables 1.1, 1.2, 1.3, and 1.12 provide a number of indicators that demonstrate how island states have been coping with population and how factors such as birth rate, life expectancy, and migration have impacted population growth. Table 1.1, also shows the population density of all island states. Baldacchino (2010), suggests that islands' average population density is three times higher than that of continents, but islands also demonstrate the extremes of population densities, ranging from zero to very high as seen with Singapore and Malta in Table 1.1. In fact, only 16 countries in Table 1.1 have population densities below the average of 144 km^2. Population density serves as one indicator of environmental sustainable development. Baldacchino (2010) further proposed that islands with low population densities are usually associated with "ecological development" as opposed to "economic development" with "negative environmental impacts" (pp. 170–171). Moreover, the perceived chasm between the eco's (ecological and economic) development trajectories is demonstrated by Singapore, which has one of the highest GDPs (see Table 1.4) and very high population density. In this regard, Conrad and Cassar (2014) conducted research in Singapore on the decoupling of economic growth from environmental degradation and concluded that "there was no decoupling of land development from either economic or population growth" (p. 6729).

TABLE 1.2: **Crude Birth Rate, Crude Death Rate, and Life Expectancy at Birth, 2022**

Continent	Island Country	Crude Birth Rate/1000	Crude Death Rate/1000	Life Expectancy at Birth
Asia	Japan	6.95	11.59	84.83
	Singapore	9.05	4.04	86.35
	Indonesia	15.32	6.75	73.08
	Timor-Leste	30.94	5.61	69.92
	Philippines	22.28	6.41	70.14
	Sri Lanka	13.8	6.49	78
	Maldives	15.54	4.15	76.94
	Bahrain	12.4	2.82	79.9
Europe	Cyprus	10.57	6.94	79.74
	Iceland	12.96	6.56	83.64
	United Kingdom	10.79	9.07	81.94
	Ireland	12.32	6.73	81.66
	Malta	9.73	8.48	83.2
Africa	Cabo Verde	18.49	5.8	73.75
	Madagascar	28.68	6	68.17
	Seychelles	12.37	6.88	76.1

In 2022, six island states demonstrated population decline from 2010, compared to eight which were reported in the 2021 report. Among the islands that have moved from a decline in 2021 to an increase in 2022, was Trinidad and Tobago. Japan on the other hand continues to show population decline, with a slight increase in decline from -2.64% in 2021 to -3.01% in 2022. According to Randall (2022), this further decline can be explained by the demographics of Japan, which continues to have a low birth rate and an aging population. Moreover, migration may also have an impact

Continent	Island Country	Crude Birth Rate/1000	Crude Death Rate/1000	Life Expectancy at Birth
	Mauritius	9.86	8.86	74.86
	Comoros	22.52	6.55	67.2
	São Tomé and Príncipe	28.19	6.2	67.06
Oceania	New Zealand	12.78	6.89	82.54
	Papua New Guinea	29.03	5.54	69.43
	Solomon Islands	22.71	3.96	76.7
	Vanuatu	21.57	3.98	75.14
	Fiji	16.56	6.37	74.27
	Tonga	20.31	4.95	77.53
	Samoa	19.21	5.37	75.19
	Nauru	21.1	6.32	67.93
	Micronesia, Fed. States	18.39	4.19	74.44
	Marshall Islands	22	4.28	74.65
	Kiribati	20.12	6.92	67.9
	Tuvalu	22.7	7.97	68.38
	Palau	11.52	8.25	74.64
	Cook Islands	12.55	9.1	77.14
	Niue	3.0 (Dec. 2019)	1.2 (Dec. 2019)	N/A
Caribbean/	Cuba	10.11	9.29	79.64
Americas	Haiti	21.12	7.23	65.95
	Dominican Republic	18.03	6.29	72.56
	Jamaica	15.91	7.43	75.75
	Bahamas, The	14.64	6.41	76.13
	St. Kitts and Nevis	12.24	7.27	77.08
	Antigua and Barbuda	15.16	5.65	77.8
	St. Vincent and the Grenadines	12.27	7.49	76.68
	St. Lucia	12.02	8.07	78.95
	Grenada	13.94	8.31	75.74
	Barbados	10.83	7.96	78.55
	Trinidad and Tobago	10.79	8.38	75.94
	Dominica	13.91	8.11	78.21

on population growth. In this regard, the net migration in absolute terms, calculated as immigration minus emigration may shed some light on the population growth of some island states. For example, in Trinidad and Tobago, there was a net migration gain of over 2,632 people in 2021, compared to a net loss of -3,999 people in 2017 (see Table 1.12 in Randall, 2022). However, the island has shown crude birth and death rates have remained pretty stable, indicating that this may have a lesser impact on the population growth. Therefore, both migration and natural factors such as birth and date rates and life expectancy at birth can affect the population growth of island states.

THE SIGNIFICANT GAP BETWEEN the birth and death rates observed in island states such as Timor-Leste, Madagascar, the Philippines, Haiti, and the Marshall Islands has had a positive impact on the population growth of these islands.

Many states shown in Table 1.1 continue to show population decline or stagnation. As was alluded to in the previous section, these changes can be driven by natural factors such as crude birth and death rates and migration. The significant gap between the birth and death rates observed in island states such as Timor-Leste, Madagascar, the Philippines, Haiti, and the Marshall Islands has had a positive impact on the population growth of these islands. For example, in Timor-Leste and the Marshall Islands, the population growth since 2010 has increased to 32.14% and 41.73%, respectively (Table 1.1); although these countries have shown net negative migration rates. On the other hand, in Japan, Malta, and the United Kingdom (UK), where death rates are higher than birth rates, e.g., in Japan and in cases such as Malta and the UK, population rates are declining or have remained stagnant in 2022. In the majority of island states the life expectancy at birth has remained relatively stable since the *2017 Annual Report on Global Islands* with the majority of islands having a life expectancy of above 70 years. However, only a few countries with the economic status of developed have a life expectancy of over 80 years. The conclusion may be drawn that there is a correlation between population growth and natural and migratory indicators, and these may have varying effects on such growth.

Urbanization in and on islands or as described in the *Island Studies Journal* Special Section–Urban Island Studies has taken some prominence in the island studies discourse and research in recent years (see e.g., Grydehøj, A., & Swaminathan, R., 2018; McGrath, 2021; Grydehøj, 2014a, Grydehøj, 2014b). Grydehøj (2014a, p. 184) identified two types of cities: "1) strongly urbanized small islands and archipelagos; as well as: 2) major population centres located on largely rural islands or archipelagos." From Table 1.3, the "pervasive mobility trend" in urbanization observed in 2021 continued in 2022 for island states (Randall, 2022). In this regard, 12 of the island states listed in the table have shown a decline in urbanization in 2022, which is similar to that of

2021. Although there may be a danger in categorizing islands based on the categories above, we may see that some of the island states (and archipelagos) may fit within the descriptions 'strongly urbanized' only. In this regard, the examples of Singapore, Japan, Malta, Iceland, New Zealand, and Dominica in the Caribbean may be described as 'strongly urbanized' island states. According to Randall (2022, p. 21), countries such as Singapore and Malta may "have likely reached a level of urban saturation that discourages any further urbanization." The case of Dominica in the Caribbean which is an island, as opposed to being archipelagic, such as The Bahamas and St. Vincent and the Grenadians also demonstrates a high level of urbanization. Dominica is one of the most mountainous islands in the Caribbean and as such the city of Roseau provides one of the better livable spaces, with opportunities for employment. This may explain this observed urban trend on the island.

Roseau River, Dominca. Credit: David Stanley, Wikimedia Commons.

Similarly, if the urban shares of populations (shown in brackets) for some archipelagic islands in Table 1.3 are investigated, it is found that The Bahamas (83.5), Seychelles (58.4), Marshall Islands (78.5) and Cook Islands (75.9) may be demonstrating "a sub-set of densely urbanized small island and archipelago" (Grydehøj, A., & Swaminathan, R., 2018). For example, the vast majority of the population of The Bahamas lives in Nassau, one of the main capital cities in the archipelago. From the perspective of archipelagic islands, the urban-rural divide may be more important between the 'urbanized island city' such as Nassau and the other remote islands in the population,

TABLE 1.3: **Urban Population Share, 2015, 2021, 2022**

Continent	Island Country	Urban Population (%)			Change in Urban Population % from 2015 to 2022
		2015	2021	2022	
Asia	Japan	93.5	91.9	92.0	-1.6%
	Singapore	100.0	100.0	100.0	0.0%
	Indonesia	53.7	57.3	57.9	7.8%
	Timor-Leste	32.8	31.7	32.1	-2.1%
	Brunei Darussalam	77.2	78.6	78.9	2.2%
	Philippines	44.4	47.7	48.0	8.1%
	Sri Lanka	18.4	18.9	19.0	3.3%
	Maldives	45.5	41.1	41.5	-8.8%
	Bahrain	88.8	89.6	89.7	1.0%
Europe	Cyprus	66.9	66.9	66.9	0.0%
	Iceland	94.1	93.9	94.0	-0.1%
	United Kingdom	82.6	98.1	84.4	2.2%
	Ireland	63.2	63.9	64.2	1.6%
	Malta	95.4	94.8	94.9	-0.5%
Africa	Cabo Verde	65.5	67.1	67.5	3.1%
	Madagascar	35.1	39.2	39.9	13.7%
	Seychelles	53.9	58.0	58.4	8.3%
	Mauritius	39.7	40.8	40.8	2.8%
	Comoros	28.3	29.6	29.9	5.7%
	São Tomé and Príncipe	65.1	75.1	75.8	16.4%
Oceania	New Zealand	86.3	86.8	86.9	0.7%
	Papua New Guinea	13.0	13.5	13.6	4.6%
	Solomon Islands	22.3	25.1	25.6	14.8%
	Vanuatu	26.1	25.7	25.8	-1.1%
	Fiji	53.7	57.7	58.2	8.4%
	Tonga	23.7	23.1	23.1	-2.5%
	Samoa	19.1	17.7	17.6	-7.9%
	Nauru	100.0	100.0	100.0	0.0%
	Micronesia, Fed. Sts.	22.4	23.1	23.2	3.6%
	Marshall Islands	72.7	78.2	78.5	8.0%
	Kiribati	44.3	56.3	57.1	28.9%
	Tuvalu	59.7	64.8	65.5	9.7%
	Palau	87.1	–	82.0	-5.9%
	Cook Islands	75.0 (2014)	–	75.9	-1.2%
	Niue	38.0 (2014)	–	47.6	-20.2%

Continent	Island Country	Urban Population (%)			Change in Urban Population % from 2015 to 2022
		2015	2021	2022	
Caribbean/	Cuba	77.1	77.3	77.4	0.4%
Americas	Haiti	58.7	58.0	58.8	0.2%
	Dominican Republic	78.9	83.2	83.8	6.2%
	Jamaica	54.8	56.7	57.0	4.0%
	Bahamas, The	82.9	83.4	83.5	0.7%
	St. Kitts and Nevis	32.1	30.9	31.0	-3.4%
	Antigua and Barbuda	23.8	24.4	24.3	2.1%
	St. Vincent and the Grenadines	50.6	53.5	53.9	6.5%
	St. Lucia	18.5	18.9	19.0	2.7%
	Grenada	35.6	36.7	36.9	3.7%
	Barbados	31.6	31.2	31.3	-0.9%
	Trinidad and Tobago	8.5	53.3	53.3	527.1%
	Dominica	69.5	71.4	71.7	3.2%

which may be demonstrating an island with a major population centre.

The nuances of urban versus rural population mix on islands are still a concern. Randall (2022, p. 22): "Note that the concepts of 'urban' versus 'rural' on some small islands may be more complicated than in mainland regions." For example, the description of Singapore as a city-state infers that the entire space is taken over by urban functions" (Randall, 2022, p. 22). In this regard, Grydehøj, A., & Swaminathan, R., (2018) conclude "the hyphenated bond between urban and rural, almost like a binary scale, which has defined the urban and rural in relational terms, no longer holds true. It has been decoupled, as it were, by a suite of digital technologies. These construct narrative bridges that transmit, absorb, transform and mutate spaces, obliterating conventional differences between urban and rural, village and city,… thrusting upon us a pressing need to create a new politics of space and place" (p. 317).

As island states appear to be moving more toward urbanization, there will be a need to consider how these urban spaces can move toward sustainable development. In this regard, Chen and Dong (2019), created and tested a number of sustainability indicators, spanning social, ecological, economic, cultural, and technological dimensions. Such indicators will become important to island states as they embark on the journey of achieving the SDGs. For example, such indicators can specifically contribute to meeting SDG 11: sustainable cities and communities, while meeting other socio-economics SDGs, inter alia, SDG 1, 2, and 3 and socio-ecological ones such as SDG 6, 13, 14, and 15.

TABLE 1.4: Gross Domestic Product (GDP) and Change in GDP; Per Capita GDP and change in GDP/capita 2021

Continent	Island Country	GDP 2021 in millions of USD	Growth Rate of GDP % 2020-2021	GDP per capita 2021 in USD	Growth Rate of GDP per capita % 2020-2021
Asia	Japan	4,937,421.88	1.6	39,285.20	2.1
	Singapore	396,986.90	7.6	72,794.00	12.2
	Indonesia	1,186,092.99	3.7	4,291.80	2.6
	Timor-Leste	1,959.13	4.4	1,457.80	2.4
	Brunei Darussalam	14,006.57	-1.6	31,722.70	-2.5
	Philippines	394,086.42	5.7	3,548.80	4.3
	Sri Lanka	84,518.83	3.7	3,814.70	2.5
	Maldives	4,889.67	31.0	8,994.60	30.2
	Bahrain	38,868.66	2.2	22,232.30	-0.5
Europe	Cyprus	27,719.34	5.5	30,798.50	4.6
	Iceland	25,458.93	3.7	68,383.80	2.1
	United Kingdom	3,186,859.74	7.4	47,334.40	7.0
	Ireland	498,559.58	13.5	99,152.10	12.5
	Malta	17,189.73	9.4	33,257.40	9.1
Africa	Cabo Verde	1,936.17	7.0	3,445.80	5.8
	Madagascar	14,637.40	4.4	514.9	1.7
	Seychelles	1,320.05	1.8	13,306.70	1.1
	Mauritius	11,156.66	4.0	8,812.10	4.0
	Comoros	1,327.96	2.3	1,494.70	0.2
	São Tomé and Príncipe	547.09	1.8	2,449.30	-0.1
Oceania	New Zealand	249,991.51	4.6	48,801.70	4.0
	Papua New Guinea	26,594.28	1.5	2,916.40	-0.4
	Solomon Islands	1,645.21	-0.2	2,337.00	-2.6
	Vanuatu	983.47	0.5	3,127.40	-1.8
	Fiji	4,592.12	-4.1	5,086.00	-4.8
	Tonga	488.83 (2020)	0.7 (2020)	4624.8 (2020)	-0.5
	Samoa	788.39	-8.1	3,939.10	-8.9
	Nauru	133.22	1.5	12,252.30	1.1
	Micronesia, Fed. Sts.	404.18	-3.2	3,476.70	-4.2
	Marshall Islands	248.67	-2.5	4,171.00	-3.2
	Kiribati	180.91 (2020)	-0.5	1514.6 (2020)	-2.1
	Tuvalu	63.1	3.0	5,291.50	1.8
	Palau	257.7 (2020)	-9.7	14243.9 (2020)	-10.2
	Cook Islands	–	–	–	–
	Niue	–	–	–	–

Continent	Island Country	GDP 2021 in millions of USD	Growth Rate of GDP % 2020-2021	GDP per capita 2021 in USD	Growth Rate of GDP per capita % 2020-2021
Caribbean/	Cuba	107352 (2020)	-10.9	9477.9 (2020)	-10.9
Americas	Haiti	20,944.39	-1.8	1,814.70	-3.0
	Dominican Republic	94,243.45	12.3	8,603.80	11.2
	Jamaica	13,638.23	4.6	4,586.70	4.2
	Bahamas, The	11,208.60	13.7	28,239.40	12.7
	St. Kitts and Nevis	976.15	-1.0	18,230.10	-1.7
	Antigua and Barbuda	1,471.13	5.3	14,900.80	4.4
	St.Vincent and the Grenadines	889.78	0.7	7,996.60	0.4
	St. Lucia	1,764.90	6.6	9,571.00	6.2
	Grenada	1,122.08	5.3	9,928.60	4.9
	Barbados	4,900.80	1.4	17,033.90	1.3
	Trinidad and Tobago	21,391.80	-1.0	15,243.10	-1.3
	Dominica	545.62	6.5	7,560.00	6.3

Socio-economic development

Here the indicators in Tables 1.4, 1.5, and 1.6 are considered. Table 1.4, provides a snapshot of the GDP, GDP/capita, and GDP growth rates, which provide an indication of the economic growth and development of island states. The gross domestic product (GDP) and more precisely for comparative purposes, GDP per capita is one of the most prevalent indicators used to judge the development status of all countries, including islands. In Table 1.4, the GDP per capita of the largely populated islands such as Japan and Singapore outstrips that of islands with small populations such as Nauru in the Pacific and Dominica in the Caribbean. If fact, Telesford (2022), demonstrated that the mean GDP per capita in USD in the Pacific islands was generally lower compared to their counterparts in the Caribbean and Asian regions. However, these generalizations may be misleading as, within the Caribbean states, seven countries have a GDP per capita of fewer than 10,000 USD, which is below the average of approximately 17,000 USD. Similarly, Singapore has skewed the average GDP per capita for islands in the Asian region. Therefore, without such a perceived powerhouse among Pacific states, the average GDP per capita is much lower. This further solidifies Randall's (2022) warning that to consider small islands as homogenous is misleading. However, Randall (2022) further pointed out that in many island states, such as Singapore, Iceland, New Zealand, and Ireland, the realities of the economies are comparable to that of Japan, thus making the GDP per capita relevant for such comparison, in terms of per capita production.

In keeping with the *2021 Annual Report on Global Islands*, the GDP and GDP/capita growth rates for the island states are again reported. As the world drags itself out of the COVID-19 pandemic, we take another look at the impacts on the GDP and GDP/capita growth of the island states. As shown in Table 1.4, the majority of island states' GDP/capita improved in 2021, with only 17 island countries recording negative GDP/capita growth rates compared to 2020, when almost all the island countries' GDP/capita were impacted by the pandemic. Of interest is the positive growth rates demonstrated by the

TABLE 1.5: **Gross National Income (GNI) per Capita, 2020 and 2021 in International $**

Continent	Island Country	2020	2021
Asia	Japan	42,550	44,570
	Singapore	86,480	102,450
	Indonesia	11,750	12,560
	Timor-Leste	4,490	5,360
	Brunei Darussalam	66,460 (2019)	67580 (2020)
	Philippines	9,040	9,450
	Sri Lanka	12,870	13,790
	Maldives	12,840	16,520
	Bahrain	44,330 (2019)	40730 (2020)
Europe	Cyprus	36,840	39,410
	Iceland	53,590	55,920
	United Kingdom	44,260	49,420
	Ireland	70,850	79,450
	Malta	38,800	44,550
Africa	Cabo Verde	6,230	6,890
	Madagascar	1,540	1,600
	Seychelles	24,310	28,050
	Mauritius	22,390	25,530
	Comoros	3,330	3,260
	São Tomé and Príncipe	4,260	4,490
Oceania	New Zealand	42,800	45,440
	Papua New Guinea	4,240	4,340
	Solomon Islands	2,680	2,680
	Vanuatu	2,880	3,220

mostly tourism destination islands in the Caribbean, see Table 1.4. Using the examples of the *2021 Annual Report on Global Islands*, Fiji moved from -19% growth in 2019–2020 to -4.1% in 2020–2021. St Lucia and Barbados in the Caribbean moved from -20.2% and 17.6% in 2019–2020 to 6.2% and 1.3% in 2020–2021, respectively. These growth rates in the Caribbean are mainly attributed to the rebound of tourism in the region (CTO, 2022; Wilkinson, 2023). Moreover, The Bahamas with a -17.1% growth rate in 2019–2020, which was attributed to the impact on tourism due to the pandemic and a hurricane (Shultz et al., 2020), experienced the most robust growth in the Caribbean Island States (CISs), of 12.7% in 2020–2021. According to Wilkinson (2023), "The Bahamas is already recording just over seven million arrivals last year, taking its figures back

Continent	Island Country	2020	2021
	Fiji	10,910	11,450
	Tonga	6,980 (2019)	7,260 (2020)
	Samoa	6,480 (2019)	6,300
	Nauru	20,770 (2019)	25,110
	Micronesia, Fed. Sts.	4,100 (2019)	3,900
	Marshall Islands	5,130 (2019)	5,120
	Kiribati	4,250	4,050
	Tuvalu	6,430	6,770
	Palau	19,530 (2019)	16620 (2020)
	Cook Islands	N/A	N/A
	Niue	N/A	N/A
Caribbean/	Cuba	N/A	N/A
Americas	Haiti	2,930	3,130
	Dominican Republic	17,060	19,730
	Jamaica	8,850	9,720
	Bahamas, The	31,200	31,870
	St. Kitts and Nevis	24,190	25,900
	Antigua and Barbuda	18,610	19,610
	St. Vincent and the Grenadines	12,810	13,950
	St. Lucia	12,200	13,810
	Grenada	14,370	15,890
	Barbados	13,010	14,530
	Trinidad and Tobago	24,800	25,670
	Dominica	10,740	12,010

to pre-pandemic levels up to 2019, the last year of tourism thriving before COVID-19 struck worldwide." Moreover, the Caribbean region, as a whole has not only capitalized on the post-COVID-19 recovery but also on harsher winters in North America and Europe (Wilkinson, 2023).

The Gross National Income (GNI) per capita in international dollars is shown in Table 1.5. The GNI is used by the World Bank to classify economies. The island states straggle the spectrum of low-income to high-income states (World Bank, 2023). Among the island states in this report only one country, Madagascar, is classified as a

TABLE 1.6: **Unemployment rates, 2016–2021**

Continent	Island Country	Unemployment Rate (%), 2016	Unemployment Rate (%), 2021	Change in Unemployment Rate (%), 2016-2021
Asia	Japan	3.2	2.8	-14.3
	Singapore	2.1	3.6	41.7
	Indonesia	5.6	4.4	-27.3
	Timor-Leste	4.4	5.1	13.7
	Philippines	5.5	2.4	-129.2
	Sri Lanka	4.5	5.4	16.7
	Maldives	6.1	6.1	0.0
	Bahrain	4.1 (2014)	1.9	-53.7
Europe	Cyprus	11.8	6.1	-93.4
	Iceland	2.7	5.4	50.0
	United Kingdom	4.8	4.5	-6.7
	Ireland	8	6.6	-21.2
	Malta	4.8	3.5	-37.1
Africa	Cabo Verde	15	15.4	2.6
	Madagascar	1.8	2.6	30.8
	Seychelles	3.96	–	–
	Mauritius	6.8	7.4	8.1
	Comoros	8	9.4	14.9
	São Tomé and Príncipe	13.4	15.9	15.7
Oceania	New Zealand	5.1	4.1	-24.4
	Papua New Guinea	2.5	2.8	10.7
	Solomon Islands	0.7	1	30.0
	Vanuatu	1.8	2.2	18.2
	Fiji	4.3	5.2	17.3

developing economy, while countries such as Singapore, St. Kitts and Nevis, Trinidad and Tobago, Singapore, Antigua and Barbuda, are medium to highly developed. These classifications show that despite the size of the population and landmass of the island country, the classifications for 'lending purposes' by the World Bank, may render a small island at risk of receiving aid and concessionary loans for development. This further suggests that small islands in these categories, are in direct competition, if you may, with larger islands such as New Zealand.

The GNI per capita was also negatively impacted by the pandemic (Randall, 2022). However, improvements in the GNI per capita have continued and the vast majority of the states reporting data have continued to show modest improvements, an indication

Continent	Island Country	Unemployment Rate (%), 2016	Unemployment Rate (%), 2021	Change in Unemployment Rate (%), 2016-2021
	Tonga	2.8	4	30.0
	Samoa	8.6	9.8	12.2
	Cook Islands	6.3 (2011)	8.2 (2011)	–
	Niue	12 (2001)	1.0 (2017)	–
	Nauru	22.96 (2011)	13.28 (2013 est.)	–
	Micronesia, Fed. Sts.	–	16.3 (2010 est.)	–
	Marshall Islands	–	6.43 (2019)	–
	Kiribati	–	8.6 (2019)	–
	Tuvalu	–	8.49 (2016)	–
	Palau	–	–	–
Caribbean/	Cuba	2.5	2.8	10.7
Americas	Haiti	40.6	15.7	-158.6
	Dominican Republic	13.8	8.5	-62.4
	Jamaica	13.8	9.2	-50.0
	Bahamas, The	12.7	13.2	3.8
	St. Kitts and Nevis	4.5 (1997)	5.1 (2005)	13.3
	Antigua and Barbuda	11 (2014)	8.1 (2018)	-21.0
	St. Vincent and the Grenadines	19.1	21.6	2.3
	St. Lucia	19.9	16.9	-17.8
	Grenada	33.5 (2013)	20.3 (2020)	39.4
	Barbados	11	10.4	-5.8
	Trinidad and Tobago	4	4.8	16.7
	Dominica	23 (2014)	11.1 (2016)	–

TABLE 1.7: **Human Development Index 2021 and 2016, and Change in HDI**

Island Country	2021 HDI	2016 HDI	Change in HDI Value 2016-2021 (%)
Ireland	0.945	0.943	0.21%
Iceland	0.959	0.941	1.91%
Singapore	0.939	0.935	0.43%
United Kingdom	0.929	0.924	0.54%
New Zealand	0.937	0.924	1.41%
Japan	0.925	0.912	1.43%
Malta	0.918	0.885	3.73%
Cyprus	0.896	0.873	2.63%
Bahrain	0.875	0.853	2.58%
Brunei Darussalam	0.829	0.839	-1.19%
Palau	0.767	0.822	-6.69%
Barbados	0.790	0.811	-2.59%
Bahamas,The	0.812	0.751	8.12%
Mauritius	0.802	0.794	1.01%
Seychelles	0.785	0.787	-0.25%
Trinidad and Tobago	0.810	0.792	2.27%
Cuba	0.764	0.773	-1.16%
Sri Lanka	0.782	0.773	1.16%
Grenada	0.795	0.771	3.11%
St. Kitts and Nevis	0.777	0.771	0.78%
Antigua and Barbuda	0.788	0.765	3.01%
St. Lucia	0.715	0.752	-4.92%
Dominican Republic	0.767	0.743	3.23%
Fiji	0.730	0.738	-1.08%
Dominica	0.720	0.740	-2.70%
Maldives	0.747	0.728	2.61%
St. Vincent and the Grenadines	0.751	0.734	2.32%
Jamaica	0.709	0.731	-3.01%
Tonga	0.745	0.722	3.19%
Philippines	0.699	0.704	-0.71%
Indonesia	0.705	0.703	0.28%
Samoa	0.707	0.710	-0.42%
Marshall Islands	0.639	–	–
Cabo Verde	0.662	0.657	0.76%
Kiribati	0.624	0.622	0.32%
São Tomé and Príncipe	0.618	0.608	1.64%
Micronesia, Fed. States	0.628	0.614	2.28%
Vanuatu	0.607	0.598	1.51%
Timor-Leste	0.607	0.598	1.51%
Solomon Islands	0.564	0.561	0.53%
Papua New Guinea	0.558	0.549	1.64%
Comoros	0.558	0.547	2.01%
Madagascar	0.501	0.523	-4.21%
Haiti	0.535	0.5	7.00%

of increased economic activities in these states. Singapore and Ireland have demonstrated the most significant increases in their GNI. Moreover, in the Oceanic states, there were slight increases in the GNI for most of the states reporting data. Of the six states that still reported 2019 data, two made increases in the GNI, with the increase in Nauru being the most significant.

The stack differences in unemployment rates between the developed Oceanic states and those that may be developing as in the Caribbean and Pacific regions are observed in Table 1.6. The trend observed, pre-COVID-19, by Craigwell & Wright (2012) and Parra-Torado (2014), in which Caribbean small states' unemployment rates are close to and above 20%, with higher rates among youth persists into this 2022 report. Compared to islands in the Oceanic, Asian, and European regions, which have unemployment rates of approximately 5% or below (17 out of 29 states reporting data for 2021). However, even within these states, the differences between states can be seen, for example, the small island states appear to have higher unemployment rates than their developed counterparts.

A note of interest is that in some small island states classified as upper-middle-income economies, the unemployment rates are relatively high, as seen in the examples of St. Lucia (16.9%), Grenada (20. 3%), and St. Vincent (21.6%). Moreover, in The Bahamas, which is classified as a high-income economy country, the unemployment rate was 13.2% in 2021. Although this is not the same for the developed island states categorized as high-income economies, such as Japan, Singapore, and New Zealand which all have unemployment rates below 5%. This note demonstrates the nuances that are usually associated with the use of GNI for the classification of islands in a global world.

The mixed impact on unemployment due to COVID-19 is still observed in Table 1.6. For example, in the Caribbean region where the economies appear to be rebounding due to the lifting of travel post-COVID-19, four out of the nine countries reporting 2021 data, are still showing positive unemployment rates or an increase in the number of eligible persons in the workforce still unemployed. Although in the Caribbean, the majority of the countries with deceased unemployment were tourist destinations, this was not the same for similar tourism states in other regions, such as Fiji, where the unemployment rate remained relatively stable.

Human development and happiness

Table 1.7 provides an overview of the human development index (HDI) for island states. The HDI, as explained in Randall (2022), is a simple composite of economic, education, and health indicators. As in earlier reports, the island countries are categorized and colour-coded in Table 1.7 into Very High – green (greater than or equal to 80); High – red (between 0.799 and 0.700); Medium – blue (between 0.699 and 0.550)

TABLE 1.8: **Consumer Price Index, Compared to Base Year of 2010**

Continent	Island Country	2010	2015	2021
Asia	Japan	100	104	105.2
	Singapore	100	113	116.8
	Indonesia	100	132	156.5
	Timor-Leste	100	143	146.2 (2019)
	Brunei Darussalam	100	100	102.7
	Philippines	100	116	137.9
	Sri Lanka	100	131	176.7
	Maldives	100	132	135.4
	Bahrain	100	111	115.3
Europe	Cyprus	100	102	104.3
	Iceland	100	118	138.6
	United Kingdom	100	112	123.8
	Ireland	100	105	108.7
	Malta	100	108	115.9
Africa	Cabo Verde	100	109	113.2
	Madagascar	100	140	192.1 (2020)
	Seychelles	100	121	141.1 (2020)
	Mauritius	100	120	138.6
	Comoros	100	98	103.6 (2013)
	São Tomé and Príncipe	100	154	185.1 (2018)
Oceania	New Zealand	100	108	120.8
	Papua New Guinea	100	128	170.8
	Solomon Islands	100	125	136.8
	Vanuatu	100	107	126.3
	Fiji	100	116	129.1
	Tonga	100	110	128.3 (2020)
	Samoa	100	108	119.3
	Nauru	–	–	-
	Micronesia, Fed. Sts.	–	–	116.7 (2020)
	Marshall Islands	–	–	-
	Kiribati	–	100	100.5 (2019)
	Tuvalu	–	–	–
	Palau	–	–	124.6
	Cook Islands	–	–	-
	Niue	–	–	-
Caribbean/	Haiti	100	139	305.4
Americas	Dominican Republic	100	123	148.5
	Jamaica	100	141	181
	Bahamas, The	100	110	119.6
	St. Kitts and Nevis	100	106	104.2
	Antigua and Barbuda	100	110	118.6
	St. Vincent and the Grenadines	100	105	111.7
	St. Lucia	100	111	111.4
	Grenada	100	104	108.6
	Barbados	100	117	134.1
	Trinidad and Tobago	100	134	144 (2020)
	Dominica	100	103	105.2

and Low – brown (less than 0.550). Many of the island states in the green belt are countries in the high to high medium income categories. In this category, there were no major changes. Of note, however, is the reduction of the HDI for Barbados and Palau, which slipped from the very high category to the high category. In the case of Palau, this may be due to the marginal decrease in the GNI in 2020.

In the most recent Human Development Report (UNDP, 2022), the key indicators of the HDI are aligned with relevant SDGs. As we maintain a focus on the SDGs, it is worthy to note that SDG 3 is coupled with SDG 2: "to end hunger, achieve food security and improve nutrition and promote sustainable agriculture." It is prudent to see how some islands are doing on SDG 3 in the HDI. For example, countries in the green zone, such as Iceland, Ireland, New Zealand, and Japan, have ranked much higher than countries in the red and lower categories. In general, it is observed that more developed countries are faring much better with achieving the SDGs and therefore are also scoring higher on indexes, such as the HDI. Similarly, these countries are also doing much better on GNIs another component of the HDI.

Globalization, inflation, investment, and innovation

In this section, we consider four tables that report on Consumer Price Index (CPI) (Table 1.8); Foreign Direct Investment (FDI) (Table 1.9); Globalization (Table 1.10), and Innovation (Table 1.11).

The internal variances in inflation, partially represented by the CPI, within developed and developing island countries in Table 1.8 (see Randall, 2022), continued into 2021. For example, Japan's inflation moved to 5.2%, between 2010 and 2021, while similarly developed countries, such as Iceland and the United Kingdom experienced much greater increases of 38.6% and 23.8% for the same period, respectively. Similarly, as a number of the small island states in the developing world have seen relatively high inflation rates, for example, Jamaica and Trinidad and Tobago, some such as Grenada, St. Kitts and Nevis, and Dominica have remained low. Using data from the Eastern Caribbean Central Bank (ECCB, 2023), energy followed by food prices can be seen to have the highest impacts on the CPI for those islands. In the context of this year's theme for the report, food prices are of particular interest. In this regard, the influence of food prices on these small island states ranged from approximately 16% in St. Kitts and Nevis to about 27% in St. Lucia (ECCB, 2023). Moreover, in the cases of Indonesia (56.5%) and Papua New Guinea (70.8%), the impact of food prices has been shown to have a profound influence on their CPI and local commodity prices,

IN THE CONTEXT OF THIS year's theme for the report, food prices are of particular interest. In this regard, the influence of food prices on these small island states ranged from approximately 16% in St. Kitts and Nevis to about 27% in St. Lucia (ECCB, 2023).

especially in the context of the COVID-19 pandemic (see Nairobi, 2021; Schmidt and Dorosh, 2022). In this regard, Schmidt and Dorosh (2022), investigated the impact of the global hike in the price of rice, and its impact on Papua New Guinea's households and economy and found that "a 25 percent increase in the domestic price of rice results in a 14.3 percent decline in overall rice consumption" (p. 102).

TABLE 1.9: **Foreign Direct Investment, Net Current, 2021 (in million USD)**

Continent	Island Country	2021 FDI Inflows	2021 FDI Outflows	Total FDI 2021
Asia	Japan	24,652	146,782	122,130
	Singapore	99,099	47,395	-51,704
	Indonesia	20,081	3,596	-16,485
	Timor-Leste	85	-	-
	Philippines	10,518	2,402	-8,116
	Sri Lanka	598	17	-581
	Bahrain	1,766	64	-1,702
Europe	Cyprus	463	-3,329	-3,792
	Iceland	174	19	-155
	United Kingdom	27,561	107,741	80,180
	Ireland	15,702	61,979	46,277
	Malta	4,005	7,247	3,242
Africa	Cabo Verde	118	-7	-125
	Madagascar	300	115	-185
	Seychelles	157	-7	-164
	Mauritius	253	86	-167
	Comoros	4	-	-
	São Tomé and Príncipe	60	0	-60
Oceania	New Zealand	3,482	-1,876	-5,358
	Papua New Guinea	87	-272	-359
	Solomon Islands	50	-11	-61
	Vanuatu	26	2	-24
	Fiji	401	35	-366
	Tonga	2	0	-2
	Samoa	9	1	-8
	Micronesia, Fed. Sts.	-	-	-
	Marshall Islands	5	-	-
	Kiribati	1	0	-1
	Tuvalu	0	-	-
	Palau	23	-	-
	Cook Islands	8	0	-8

Continent	Island Country	2021 FDI Inflows	2021 FDI Outflows	Total FDI 2021
Caribbean/	Haiti	50	-	-
Americas	Dominican Republic	3,102	153	-2,949
	Jamaica	321	56	-265
	Bahamas, The	360	279	-81
	St. Kitts and Nevis	40	-3	-43
	Antigua and Barbuda	104	-9	-113
	St. Vincent and the Grenadines	65	4	-61
	St. Lucia	47	26	-21
	Grenada	144	-6	-150
	Barbados	239	18	-221
	Trinidad and Tobago	342	37	-305
	Dominica	44	-	-

Generally, some grey and academic literature is emerging on the impacts of COVID-19 on global and some island country's economies (see for example Lewis et al., 2023; McDermott and Swinnen, 2022; Ozili and Arun, 2023; Rashid et al., 2020; Sutcliffe, 2023). In the context of the impact of COVID-19 in small island states, Rashid et al. (2020, p. 1) concluded that "Many small island economies—highly dependent on food imports—face the added challenge of ensuring food security during the health and economic crisis." This conclusion is of importance to this year's report, with a focus on agriculture and its contributions to food security. As was reported in Randall (2022): "greater emphasis on local food production and sharing has already started on some Pacific islands (Ferguson et al., 2022) and in the Caribbean (Blazy et al., 2021). If these trends continue, it would bring greater food security to island residents who have often relied on imported food and food supply chains." Moreover, Schmidt and Dorosh (2022, p. 104) suggest, that policymakers should consider broader, longer-term investments in agriculture to improve food security and resilience to shocks." In this regard, they further proposed that a critical area for such investment is "rural agriculture extension service" (Schmidt and Dorosh, 2022, p. 104).

Table 1.9 shows the levels of inflows and outflows of Foreign Direct Investment (FDI) in island countries. However, as the COVID-19 pandemic is lifting and tourism and travel appear to be on the rise, especially in tourism-centric island countries, foreign direct investment inflows appear to be rising, although the overall FDI in some countries may be shrinking. According to Randall (2022, p. 25), much of the foreign investment on small islands is linked to the tourism sector; and Scarlett (2021) predicted that as the sector grows post-pandemic foreign investment should also expand. In Table 1.9, we see that many of the island states that have a high dependence on tourism revealed an increase in the inflows of FDI, although the overall FDI remained negative in many cases.

TABLE 1.10: **Ranks and Scores of Globalization Index, 2021**

Island Country	Globalization Index				Economic Globalization	Social Globalization	Political Globalization
	Island Country Ranking	World Ranking	Score	Change in World Ranking 2020-2021			
United Kingdom	1	5	88.58	0	80.07	88.67	97.01
Ireland	2	11	85.82	0	87.98	87.94	81.54
Singapore	3	20	83.25	0	94.37	87.33	68.04
Malta	4	29	80.76	2	85.75	84.63	71.90
Cyprus	5	32	79.54	-1	84.13	85.68	68.81
Japan	6	41	75.36	-1	66.50	80.02	79.56
New Zealand	7	42	75.36	0	64.32	84.29	77.46
Mauritius	8	49	71.34	0	80.75	77.62	55.65
Iceland	9	53	70.28	0	66.57	84.42	59.85
Bahrain	10	62	68.32	0	81.27	73.36	50.53
Philippines	11	74	65.31	0	53.54	60.66	81.58
Dominican Republic	12	75	65.13	0	51.29	73.27	70.83
Brunei Darussalam	13	84	63.05	5	68.15	74.64	47.61
Barbados	14	85	62.89	2	57.90	78.27	52.49
Indonesia	15	87	62.62	0	47.33	52.93	87.59
Seychelles	16	88	62.45	-2	76.76	72.73	38.99
Jamaica	17	89	62.40	0	55.26	68.31	63.64
Trinidad and Tobago	18	94	60.96	-5	55.28	72.16	55.45
Cuba	19	99	58.64	0	–	51.28	69.46
Sri Lanka	20	103	57.07	0	38.83	55.74	76.59
Fiji	21	108	55.33	1	48.52	67.89	50.70
Cabo Verde	22	110	55.15	2	56.36	62.97	46.66
Antigua and Barbuda	23	112	55.10	-2	57.44	76.36	33.46
Bahamas	24	117	54.59	1	45.70	84.59	34.90
St. Lucia	25	119	54.27	-2	56.33	76.06	34.46
Grenada	26	132	51.55	2	53.76	71.26	31.47
Dominica	27	133	51.45	-1	54.95	73.27	31.44
Maldives	28	142	50.09	3	62.90	65.16	25.77
Samoa	29	148	49.25	0	47.94	68.43	33.47
St. Kitts and Nevis	30	152	48.97	-3	52.15	75.46	23.25
Papua New Guinea	31	153	48.90	-1	53.26	39.88	52.63
St. Vincent and the Grenadines	32	155	48.39	0	45.06	73.67	28.87
Timor-Leste	33	156	48.07	6	60.20	49.09	36.27
Vanuatu	34	157	47.55	-1	60.16	60.06	27.34
Madagascar	35	163	46.48	-1	42.99	36.95	59.51
Kiribati	36	164	45.95	0	70.71	60.18	13.98
Palau	37	165	45.70	4	59.45	77.60	11.34
Tonga	38	168	45.42	-3	50.49	65.90	23.48
Micronesia, Fed. Sts.	39	169	45.38	-1	70.35	63.04	12.70

Island Country	Globalization Index				Economic Globalization	Social Globalization	Political Globalization
	Island Country Ranking	World Ranking	Score	Change in World Ranking 2020-2021			
Marshall Islands	40	175	44.73	-3	63.81	68.08	16.75
São Tomé and Príncipe	41	182	41.81	1	41.81	53.40	31.03
Haiti	42	185	41.27	-2	33.38	42.20	47.66
Solomon Islands	43	190	39.50	0	39.83	51.64	28.60
Comoros	44	191	39.18	0	31.25	50.15	35.26

For example, in Fiji, the FDI inflow in 2020 was USD 241M, while in 2021 this increased to USD 401M. Similarly, although some countries in the Caribbean region showed comparative FDI inflow since 2020, others such as Antigua and Barbuda, showed an FDI inflow of USD 22M in 2020 to USD 104M in 2021, and Dominica, an FDI inflow of USD 25M in 2020 moved to USD 44M in 2021. A clearer picture of the impacts of the pandemic on FDI may emerge in the next iteration of the *Annual Report on Global Islands*.

Rooftop orchard, Singapore. Credit: Trong Nguyen, Adobe Stock.

TABLE 1.11: **Global Innovation Index, 2022**

Island Country	Global Innovation Index				Innovation Output Sub-Index		Innovation Input Sub-Index		Efficiency Ratio (2022)	
	Island Country Ranking	World Ranking	Score	Change in World Ranking 2021-2022	World Ranking	Score	World Ranking	Score	Island Country Score ranking	
United Kingdom	1	4	59.7	0	3	55.8	7	63.6	1	0.88
Singapore	2	7	57.3	0	14	43.9	1	70.6	9	0.62
Japan	3	13	53.6	0	12	45.8	11	61.4	6	0.75
Iceland	4	20	49.5	0	17	43	24	55.9	4	0.77
Malta	5	21	49.1	2	13	45.4	27	52.9	4	0.86
Ireland	6	23	48.5	-1	19	41.3	25	55.8	6	0.74
New Zealand	7	24	47.2	-1	28	37.2	23	57.1	10	0.65
Cyprus	8	27	46.2	0	20	41.1	29	51.3	3	0.80
Mauritius	9	45	34.4	1	54	24.5	40	44.4	12	0.55
Philippines	10	59	30.7	-1	51	25.7	76	35.7	2	0.72
Bahrain	11	72	27.9	1	86	14.3	50	50	16	0.29
Indonesia	12	75	27.9	2	74	18.8	72	36.9	14	0.51
Jamaica	13	76	27.7	-2	60	22.5	88	33	11	0.68
Sri Lanka	14	85	24.2	2	68	19.9	102	28.6	12	0.70
Dominican Republic	15	90	22.7	0	92	12.7	90	32.7	15	0.39
Brunei Darussalam	16	92	22.1	-3	129	3.1	53	41.2	17	0.08
Madagascar	17	106	18.6	0	85	14.3	125	22.9	8	0.62

As a reminder Randall (2022, p. 37) summarized the three aspects of globalization postulated by Gygli et al. (2019) as "Economic globalization includes variables such as openness to trade, FDI, and international debt. Social globalization includes international tourism and students, internet bandwidth, and trade in cultural goods, while political globalization includes the presence of international embassies and organizations (including NGOs), and the number of international treaties."

The top ten ranking countries have not changed since the *2021 Annual Report on Global Islands*, and these are mainly from the developed island countries, with the UK maintaining its top island rank and still ranking 5th in the world. It was noted that Cyprus, which had a gigantic leap in the world ranking, which Vryonides & Pavlou (2021) attributed to the internationalization of the education sector, slipped in the world rankings, but continues to maintain a spot in the top 5 of the island country

TABLE 1.12: **Net Migration and Migration Rates Various Years**

	Island Country	Year	Net Migration	Net Migration Rate 2022 est.(per 1,000 population)
Asia	Japan	2021	87,584	0.74
	Singapore	2021	19,321	4.22
	Indonesia	2021	-14,992	-0.71
	Timor-Leste	2021	-1,997	-3.82
	Brunei Darussalam	2021	-192	2.18
	Philippines	2021	-80,125	0.13
	Sri Lanka	2021	-92,400	-1.22
	Maldives	2021	1,189	-12.78
	Bahrain	2021	-9,150	-0.82
Europe	Cyprus	2021	1,995	6.96
	Iceland	2021	622	2.89
	United Kingdom	2021	202,027	3.59
	Ireland	2021	15,320	3.79
	Malta	2021	10,408	5.49
Africa	Cabo Verde	2021	-1,274	-0.57
	Madagascar	2021	-742	0.00
	Seychelles	2021	146	0.86
	Mauritius	2021	-478	0
	Comoros	2021	-1,772	-2.25
	São Tomé and Príncipe	2021	-792	-7.19
Oceania	New Zealand	2021	38,220	5.83
	Papua New Guinea	2021	10,695	0.00
	Solomon Islands	2021	-808	-1.55
	Vanuatu	2021	-197	-1.30
	Fiji	2021	-6,003	-5.84
	Tonga	2021	-948	-18.01
	Samoa	2021	-882	-7.51
	Palau	2021	3	0.6
	Kiribati	2021	-296	-2.80
	Nauru	2021	-66	-10.60
	Micronesia, Fed. Sts.	2021	-635	-20.91
	Marshall Islands	2021	-1,901	-4.37
	Tuvalu	2021	-15	-6.41
	Cook Islands	–	–	-27.31
	Niue	–	–	N/A
Caribbean/	Haiti	2021	-32,977	-1.88
Americas	Dominican Republic	2021	-14,966	-2.68
	Jamaica	2021	-5,664	-7.70
	Bahamas, The	2021	485	0.00
	St. Kitts and Nevis	2021	-90	1.16
	Antigua and Barbuda	2021	0	2.03
	St. Vincent and the Grenadines	2021	-379	-6.47
	St. Lucia	2021	0	-1.09
	Grenada	2021	-85	-2.43
	Barbados	2021	-28	-0.29
	Trinidad and Tobago	2021	2,632	-1.01
	Dominica	2021	57	-5.31

rankings. The majority of the small island developing states continue to maintain rankings at the lower end of the table.

Randall (2022, p. 38) citing the World Intellectual Property Organization (2021) defines innovation broadly as "a new or improved product or process … that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)." Noting that innovation is not merely a science and technology-based idea (Randall, 2022), but cultural (Guillén & Deckert, 2021). Higher education and training were also influential and have been a strong causal factor of innovation (de Miranda et al., 2021). Moreover, a continued look at the globalization index and rank and the innovation index suggests a positive correlation between highly globalized and innovative island countries. For example, the top ten ranked innovative island countries all appear in the top ten globalized countries and in similar order. Moreover, all the countries are from the developed world.

Innovation has also been applied to small island states (see for example Leal-Ayala, 2021; UNDP, 2022). This is of note as one of the themes for the year's report is on the blue economy and its possible links to food provisioning and security. In a UNDP Blog, some innovative ways of providing food through e-commerce were highlighted, for example, a website to monitor locally-harvested fisheries to be sold online in Barbados and digitally connected rooftop farms in Singapore were highlighted (UNDP, 2022).

Migration and trade

These final tables will consider migration in some more detail (Table 1.12) and trade (Table 1.13). Both tables, although not explicitly linked, are focused on the lifeblood of island states: the mobility of people and goods and services. Table 1.12 (some of which were addressed in the first sub-section of section 1), shows net migration values (i.e., immigration minus emigration) for the island states, using the most recent data. Randall (2022) in the *2021 Annual Report on Global Islands*, observed that some nations showed massive overall growth or population decline because of migration. For example, Japan and the UK experienced net gains of more than 300,000 residents each over a one-year period, while Sri Lanka lost almost 500,000 people. However, there were some changes in these migration numbers in 2021 for these states. For example, although Japan and the UK have continued to experience net positive rates of migration, the absolute numbers have decreased in both states, with a more drastic decrease observed in Japan. On the other hand, in Sri Lanka the net loss in people moved from about 500,000 to about 90,000 in 2021. Most of the small island developing states in the Pacific and Caribbean regions have experienced net losses in people in the years of data reported, see Table 1.12.

TABLE 1.13: **Trade as a Percentage of GDP in 2010, 2021**

Continent	Island Country	2010	2021
Asia	Japan	28.6	31.4 (2020)
	Singapore	369.7	338.3
	Indonesia	46.7	40.4
	Timor-Leste	150.9	163.0
	Brunei Darussalam	95.4	147.1
	Philippines	71.4	63.5
	Sri Lanka	46.4	43.0
	Maldives	143.0	117.9 (2020)
	Bahrain	120.5	139.8 (2020)
Europe	Cyprus	109.1	160.9
	Iceland	94.1	78.4
	United Kingdom	58.6	55.2
	Ireland	189.4	229.4
	Malta	307.4	283.5
Africa	Cabo Verde	94.4	82.6
	Madagascar	57.9	52.6
	Seychelles	201.9	197.0
	Mauritius	113.5	86.1
	Comoros	39.6	34.1
	São Tomé and Príncipe	–	-
Oceania	New Zealand	58.2	44.3 (2020)
	Papua New Guinea	–	-
	Solomon Islands	130.5	64.0 (2020)
	Vanuatu	99.4	70.0 (2020)
	Fiji	121.7	75.1
	Tonga	72.7	81.2 (2020)
	Samoa	80.6	65.0
	Palau	127.1	125.0 (2018)
	Kiribati	91.5	98.0 (2018)
	Nauru	99.0	146.9
	Micronesia, Fed. Sts.	–	95.7
	Marshall Islands	–	104.5 (2020)
	Tuvalu	–	-
	Cook Islands	–	-
	Niue	–	-
Caribbean/	Haiti	–	37.0
Americas	Dominican Republic	56.0	52.7
	Jamaica	80.9	74.5
	Bahamas, The	78.7	69.6
	St. Kitts and Nevis	76.2	-
	Antigua and Barbuda	104.7	71.7
	St. Vincent and the Grenadines	84.0	85.0 (2012)
	St. Lucia	99.8	-
	Grenada	73.1	52.3
	Barbados	95.9	66.3 (2020)
	Trinidad and Tobago	85.8	9.5 (2020)
	Dominica	88.1	110.0 (2020)

Randall (2022) comprehensively addressed this observation in the Pacific region, which may also be influenced by intra-regional mobility. In this regard, the Cook Islands which was used as an example saw no significant changes in the decline rate of -27.31% in 2021 compared to -28.6% (see Randall, 2022 and Table 1.12). In fact, Cangiano & Torre (2020) attribute intra-regional mobility among residents of Pacific islands as not being new and as an important resilience mechanism that islands have used to cope with extreme events and to strengthen trade and social relationships (see Randall, 2022). Economic, is not the only determining factor of migration. Randall (2022) identified some key factors that are relevant to small islands, especially in the Pacific, including: "culture, and in particular how Islanders relate to land and religion can influence decision-making, promoting or hindering mobility" (Oakes 2019, p. 480) and is a part of everyday life, livelihoods and the maintenance of social cohesion (Rampengan et al., 2018). Moreover, internal migration, especially in large archipelagic islands, occurs inter-island or within the country (Weir, 2020).

RANDALL REMINDS US THAT: "Trade as a share of GDP is a rough indicator of the openness of an island and its economy. The significance of trade can depend on many factors, including the degree of isolation, the island's economic structure, and the absolute size of its economy" (2022, p.41).

In line with Randall (2022, pp. 40–41), it must be reiterated here again that "with the projected consequences of sea level rise, discussions regarding migration have taken on greater urgency. This includes use of the term 'climate refugees' in the popular press, and real plans by some island nations (e.g., Kiribati) to purchase land elsewhere in the region for the eventual relocation of their people." Moreover, the "myopic view" that Nagabhatla et al. (2020) identified, that the world has of the pressures of climate change on SIDS, should be addressed by more relevant and inclusive aspects, such as transformative mobility (Farbotko et al., 2018).

Table 1.13 shows trade as a share of the island countries' GDP. Randall (2022, p. 41) reminds us that: "Trade as a share of GDP is a rough indicator of the openness of an island and its economy. The significance of trade can depend on many factors, including the degree of isolation, the island's economic structure, and the absolute size of its economy." The data in Table 1.13 demonstrate that industrial countries, such as Singapore, Malta, and Ireland continue to derive a large share of their GDPs from trade. These shares have increased slightly in some cases, such as Singapore which moved from 321 in 2020 to 338 in 2021, and Malta from 272 in 2020 to 283 in 2021. Despite these increases, the share of trade to these countries' GDP is still below the levels of 2010 (see Table 1.13). Japan, which is one of the most industrialized island countries in the table still shows a low share of trade to their GDP (31.4 in 2020 see Table 1.13). According to Randall (2022; p. 41), a "developed economy like Japan's may engage in a significant amount

of trade in absolute terms, but this international exchange still represents a relatively small share of its total GDP".

A number of papers and research reports have emerged on the impacts of the pandemic on global trade with sparse papers specific to small island states (see for example Liu, X., Ornelas, E. and Shi, H, 2022). However, in the case analysis of Mauritius, with a current (2021) trade-to-GDP ratio of 86.1%, a slight increase from 79% in 2020, it was concluded that a loss of exports of approximately, -36.6% was realized in a second wave of COVID-19 (Tsakok, 2021). However, as Randall (2022, p. 43) suggests: "Despite the obvious tragic consequences of the COVID-19 pandemic, findings such as these suggest that opportunities exist for island governments to rethink their economic, trade, and social policies so that they are more resilient to future extreme events. In this regard, Tsakok (2021, p. 1) proposes that: "Mauritius must once again transform itself from an economy that relies on labor-intensive sectors to a new foundation of knowledge-intensive

TABLE 1.14: **Most Recent Population Statistics (Subnational Islands)**

	Year	Population	Population Growth Rate (%) over Previous Year	Year	Population	Percent Change (%) in Population Between Two Dates Indicated
Bali, Indonesia	2020	4,414,400	1.17 (2019)	2014	4,225,000	4.48
Gotland, Sweden	2021	61,001	1.46	2016	58,003	5.17
Greenland, Denmark	2022	56,466	0.42	2016	56,190	0.49
Hainan Island, China	2021	10,081,232	-4.20	2016	9,171,300	9.92
Hawai'i, USA	2022	1,440,196	-0.01	2016	1,428,557	0.81
Java, Indonesia	2020	153,567,000	3.09	2015	141,300,000	8.68
Jeju, South Korea	2020	695,519	0.07	2016	661,190	5.19
Luzon, Philippines	2021	64,260,312	1.63	2015	53,336,134	20.48
Okinawa, Japan	2022	1,469,230	2.30	2015	1,434,138	2.45
Phuket, Thailand	2022	443,679	1.30	2017	411,948	7.70
Prince Edward Island, Canada	2022	172,707	5.68	2016	148,649	16.18
Taiwan, China	2022	23,893,394	0.07	2016	23,556,706	1.43
Tasmania, Australia	2022	571,517	5.44	2016	517,588	10.42

TABLE 1.15: **Birth and Death Rates, various years (Subnational Islands)**

	Year	Crude Birth X / 1,000 people	Crude Death X / 1,000 people
Bali, Indonesia	2017	18.42	7.17 (2015)
Gotland, Sweden	2018	11.00	9.00
Greenland, Denmark	2020	14.80	9.20
Hainan Island, China	2021	3.73	6.01
Hawai'i, USA	2020	11.20	8.37
Java, Indonesia	2022	17.09	9 (2020)
Jeju, South Korea	2013	9.10	5.9 (2019)
Luzon, Philippines	2018	16.30	5.5 (2017)
Okinawa, Japan	2021	10.00	9.40
Phuket, Thailand	2016	17.38	5.54
Prince Edward Island, Canada	2020	8.01	8.57
Taiwan, China	2022	6.30	8.00
Tasmania, Australia	2019	10.92	8.71

sectors of the fourth industrial revolution (4IR)." A proposal that may be relevant to many island economies and more so in the context of the themes for this report: the blue economy and tropical agriculture.

SECTION 2: SUBNATIONAL ISLAND JURISDICTIONS

In keeping with the *2021 Annual Report on Global Islands*, we again acknowledge the importance of the thousands of subnational island jurisdictions (SNIJs) (Randall, 2022) and the burgeoning research and literature in and on these jurisdictions (see, e.g., Baldacchino, 2020; Ferdinand et al., 2020; Randall, 2021; Randall & Boersma, 2020; Rojer, 2021). The inclusion of island jurisdictions (see Chapter 14 Small Islands) in the Intergovernmental panel on climate change (IPCC) 6th Report also epitomizes the rising importance of these islands (Mycoo et al., 2022). Although SNIJs per se, are beginning to take some prominence on the global stage as with climate change and in the island studies agenda, we are still plagued with the unavailability of data to analyze them. In this regard, this year's report will again focus on the six tables that were featured in the 2022 report.

The population dynamics shown in Table 1.14 have not changed significantly since

TABLE 1.16: **Life Expectancy (Subnational Islands)**

	Year	Total Life Expectancy	2017 Total Life Expectancy	Change in Life Expectancy (%) Between the Two Dates Indicated
Bali, Indonesia	2019	75.5	–	–
Gotland, Sweden	2022	83.2	81.5	2.1
Greenland, Denmark	2021	73.8	72.7	1.5
Hainan Island, China	2022	77.5	76.6	1.1
Hawai'i, USA	2019	80.9	81.4	-0.6
Java, Indonesia	2019	72.3	–	–
Jeju, South Korea	2022	83.4	–	–
Luzon, Philippines	2022	71.4	72.1	-1.0
Okinawa, Japan	2020	84.0	83.2	0.9
Phuket, Thailand	2019	77	75	2.7
Prince Edward Island, Canada	2020	81.8	80.9	1.1
Taiwan, China	2022	80.9	80.3	0.7
Tasmania, Australia	2019	81.6	80.7	1.1

the last report. In this regard, the similar trends of relative population growth stagnation in the developed jurisdictions compared to relatively small growth in developing jurisdictions remains consistent. As was observed in the 2021 report, Prince Edward Island (PEI) was the only island jurisdiction in the developed islands that demonstrated a high population growth rate. This rate has continued into this year almost doubling and, Tasmania, Australia has shown a population growth of 10.7% since 2016, almost doubling compared to 2021, in which the growth rate was 4.7% (Randall, 2022).

The majority of SNIJs continue to demonstrate a crude birth rate that exceeds the crude death rate, even in jurisdictions with low population growth rates. However, Table 1.15 further shows that added to PEI, Taiwan, China, and Hainan Island, China, have reported crude death rates that exceed the crude birth rate. For example, in 2019 the crude birth rate in Hainan was 12.87, while the crude death rate was 6.11 (see Randall, 2022). However, in 2021 (Table 1.15) the birth rate has decreased to 3.73, while the death rate remained relatively stable at 6.01. Similarly, for Taiwan, China, the death rate remained relatively stable at around 8.00, while the birth rate moved from 8.40 in 2021 to 6.30 in 2022. This shift especially in Hainan Island, China, may be attributed to a delayed impact on the island of the previous 'one child policy.' This

observation may be in line with the influences of policy, outside of natural and migratory factors that can influence population change (Randall, 2022).

Therefore, natural and migratory factors on population change as demonstrated here can be influenced by deliberate policy and strategies. For example, it was noted in the 2021 report that PEI experienced a 9% population growth during the previous five years (Randall, 2022). It is postulated therefore that this growth was highly stimulated by "an aggressive international immigration strategy" (Randall, 2022, p. 45) which encouraged immigration even when the natural factors were indicating that the population may decline. This strategy is apparently still impacting the population rise demonstrated previously in Table 1.14. Additionally, policies may trigger population dynamics associated with both natural and migratory factors. For example, the immigration strategy of PEI and the previous 'one child policy' of China, may have both impacted the migratory and natural influences on population growth and decline in PEI, Canada, and Hainan, China, respectively.

Table 1.16 demonstrates that the life expectancy for the majority of SNIJs continues to improve in line with the global improvements reported by Riley (2005). Howev-

TABLE 1.17: **Urban Share of Population (Subnational Islands)**

	Year	Urban %	Urban % (2010)	Change in Urban Share of Population (%) Between Two Dates Indicated
Bali, Indonesia	2020	70.2	60.2	16.6
Gotland, Sweden	2020	63.1	–	–
Greenland, Denmark	2021	87.5	84.4	3.7
Hainan Island, China	2021	62.5	49.2	27.0
Hawai'i, USA	2014	91.9	91.9	0.0
Java, Indonesia	2021	57.3	49.9	14.8
Jeju, South Korea	2020	100.0	100.0	0.0
Luzon, Philippines	2021	47.7	45.3	5.3
Okinawa, Japan	2020	100.0	–	–
Phuket, Thailand	2021	52.2	48.4	7.9
Prince Edward Island, Canada	2016	40.0	44.8	-10.7
Taiwan, China	2020	78.9	74.4	6.0
Tasmania, Australia	2016	47.0	–	–

er, there was some slight decline in life expectancy for Hawai'i, USA (-0.6) and Luzon, Philippines (1.0), see Table 1.16. The decrease in Hawai'i did not result in a drop in life expectancy of below 80 years and thus remains consistent with the average life expectancy of developed countries. And although the Philippines has shown a slight decrease from 72.1 in 2017 to 71.4 in 2022 (see Table 1.16), this again appears to be consistent with the averages in the developing world. Notwithstanding, these declining trends are pointing towards some possibilities of the impact of COVID-19 on life expectancy in both developed and developing island jurisdictions. Although global public health data may mask what is occurring at the jurisdiction level (Randall, 2022), already, research is pointing to declines in life expectancy in some regions, although in other regions of the same jurisdiction, there was no change, such as in Spain (Trias-Llimós et al., 2020) and Brazil (Castro, 2021). The literature on emerging trends in life expectancy is still limited both globally and for islands, but this observation is pointing towards a possible phenomenon that may become clearer in the next iteration of the *Annual Report on Global Islands*.

TABLE 1.18: **Labour Force Characteristics (Subnational Islands)**

	Year	Labour Force	Unemployment Rate %
Bali, Indonesia	2018	3,243,320	5.6
Gotland, Sweden	2019	28,952	7.1
Greenland, Denmark	2015	26,840	9.1
Hainan Island, China	2021	5,440,000	4.8
Hawai'i, USA	2022	614,700	3.6
Java, Indonesia	2018	3,106,118	4.0
Jeju, South Korea	2020	458,680	2.5 (2022)
Luzon, Philippines	2021	41,100,000	8.8
Okinawa, Japan	2022	773,000	3.1
Phuket, Thailand	2013	167,883	2.3
Prince Edward Island, Canada	2022	84,700	6.8
Taiwan, China	2022	11,858,000	3.6
Tasmania, Australia	2022	279,800	4.1

It is worth noting that four island jurisdictions—Java and Bali; Okinawa and Luzon are affiliated to three island states—Indonesia, Japan, and the Philippines, respectively, in this report. The life expectancies for the three states are Indonesia 73.08 years, Japan 84. 83 years and the Philippines 70.14 years, see Table 1.2. A cursory look at the most recent life expectancies for the jurisdictions shows Java at 72.3 years and Bali at 75.5 years; Okinawa at 84.0 years and Luzon at 71.4 years. The differences in life expectancies between the island jurisdictions and the motherland are not significant. For example, in Okinawa and Japan, the differences in life expectancy are insignificant (0.83). Another observation of note is that for the developed island states and jurisdictions, the life expectancies are generally higher than for the developing islands and jurisdictions. This is important to note as the relationship between state and jurisdiction can influence many factors in the jurisdiction such as life expectancy, GDP, GNI, and population that are necessary for the sustainable development of both islands.

FOR ISLAND JURISDICTIONS that may have reached urban saturation (e.g., Jeju, Hawai'i in Table 1.17), development may lead to environmental pressures, social conflict, and economic inequality as observed on several Hawaiian islands (Aliasut, 2019).

The significant variations in rates of urbanization observed by the SNIJs in Table 1.17 in the report of 2022, still continue. Of the four jurisdictions updated in the table, there were no significant changes in urbanization. For Hainan and Java, which had urbanization rates of 14.2% and 24.0% between 2010 and 2020 respectively (see Randall, 2022), these rates were a mere 27.0% and 14.8%, respectively in 2021 (see Table 1.17). The argument proposed by Randall (2022) that some challenges, such as providing services may well continue until stabilization is achieved (Chen, 2018) still holds. Moreover, for island jurisdictions that may have reached urban saturation (e.g., Jeju, Hawai'i in Table 1.17), development may lead to environmental pressures, social conflict, and economic inequality as observed on several Hawaiian islands (Aliasut, 2019). This has led to arguments on the pros and cons of urbanization. This argument may hold true on "small islands with limited resources to accommodate urban growth" (Randall, 2022, p. 48). This has been observed by Cocklin and Keen (2000) who proposed that the fragile biophysical environments, limited land resources, and shortage of basic resources on Pacific islands make them especially vulnerable to the problems associated with rapid urbanization.

Following the *2021 Annual Report on Global Islands*, once again the heterogeneity of islands is demonstrated, see Table 1.18. Despite the comparable sizes of SNIJs such as Luzon and Greenland, Randall (2022) notes the differences between Greenland and Luzon, with Greenland cold and focused and fisheries, etc. (Arnaut, 2022; Rasmussen, 2000), compared to the tropical climate and economic structure of Luzon, which has a high contribution, approximately 55% of GDP from Manila (Balisacan et al., 2009).

TABLE 1.19: **Gross Domestic Product, various years (Subnational Islands)**

	Year	Gross Domestic Product (GDP) in USD	GDP per capita in USD
Bali, Indonesia	2021	5,839,000,000 (2019)	2,115
Gotland, Sweden	2016	2,371,259,730	40,853
Greenland, Denmark	2020	3,076,015,347	54,571
Hainan Island, China	2021	101,880,202,023	8,723
Hawai'i, USA	2021	91,096,000,000	63,173
Java, Indonesia	2016	9,360,000,000	3,620
Jeju, South Korea	2016	19,335,000,000	29,781 (2021)
Luzon, Philippines	2021	40,115,966,000.00	2,945
Okinawa, Japan	2021	32,681,405,695	16,667
Phuket, Thailand	2016	576,818,694	1,076
Prince Edward Island, Canada	2021	7,007,000,000	42,529
Taiwan, China	2021	1,230,000,000,000	33,059
Tasmania, Australia	2021	34,845,000,000	64,349

However, despite these differences, both SNIJs have comparable unemployment, with Greenland at 9.1% and Luzon at 8.8%.

Another look at the unemployment rate for the four SNIJs that are associated with the three island states demonstrates that with the exception of Luzon, Philippines, the unemployment rates are comparable for the other states and the SNIJs. For example, Indonesia's unemployment rate of 4.4%, see Table 1.6 is comparable to that of Java, 4.0%, and Bali, 5.6%, see Table 1.18. However, there is a stark difference in the unemployment rate for the Philippines at 2.4% while Luzon, Philippines, has an unemployment rate of 8.8%, about 3.5 times that of the associated state. As Randall (2022, p. 49) indicated "the large, tropical island of Luzon can hardly be considered a SNIJ in the conventional definition of the term. Although it is still largely rural in population and economic structure" this may attribute to the relatively large margin in the unemployment rates between the SNIJ and the state.

Table 1.19 demonstrates the GDP per capita measure for the SNIJs in this report. Tasmania, Australia, continues to show growth in its GDP per capita and from this perspective remains the wealthiest SNIJ, followed by Hawai'i which also showed small incremental growth in Table 1.19. Additionally, although Luzon's GDP is comparatively high, compared to Taiwan and Hainan, China, its GDP per capita is comparable

to that of Bali and Java, Indonesia. Similar to comparing the unemployment rate of some of the SNIJs to their affiliated states, we compare the GDP per capita. In this regard, with the exception of Okinawa, Japan with a GDP per capita of USD 16,666 in 2021, the state of Japan's GDP per capita was about twice that of Okinawa at USD 39,286. There was an insignificant difference between the SNIJs of Java and Bali in Indonesia and Luzon in the Philippines.

This year not many conclusive statements could be made on the impacts of COVID-19 on the small island states and jurisdictions, and this is due mainly to a continued scarcity of research specific to these small islands. However, as it relates to GDP growth and decline and unemployment rates in mainly tourist-centric island states, there appeared to be some impact due to the pandemic. In this regard, we look forward to the *2023 Annual Report on Global Islands*, which may feature more papers and research and thus assist with making much better correlations and conclusions. But as we move further into the future, and as we note this year's theme, the report's themes are beginning to morph. So, although we go into the future trying to apply lessons learned from the COVID-19 pandemic, we surge forward with optimism that islands will become more resilient to external shocks such as the one experienced by the pandemic.

REFERENCES

Aliasut, N. (2019). Problems with paradise: Rethinking the tourist landscape in Pupukea, Hawaii [Unpublished Doctoral dissertation]. University of British Columbia.

Arnaut, J. L. (2022). The political economy of Greenland. In L. Hogedahl (Ed.), *Greenland's economy and labour markets* (pp. 30–47. Routledge.

Baldacchino, G. (2010). *Island enclaves: offshoring strategies, creative governance, and subnational island jurisdictions*. Canada: McGill Queen's University Press.

Baldacchino, G. (2020). How it feels 'on the ground': The experiences of residents from a subnational island jurisdiction. *Small States & Territories*, *3*(1), 123–136.

Balisacan, A. M., Hill, H., & Piza, S. F. (2009). Spatial disparities and development policy in the Philippines. In Y. Huang & M. Bocchi (Eds.), *Reshaping economic geography in East Asia* (pp. 169–182). The World Bank.

Blazy, J. M., Causeret, F., & Guyader, S. (2021). Immediate impacts of COVID-19 crisis on agricultural and food systems in the Caribbean. *Agricultural Systems*, 190, 103106.

Cangiano, A., & Torre, A. R. (2020). South-South mobility, regionalism and governance in Pacific islands. In L. Briguglio, J. Byron, S. Moncada, & W. Veenendaal (Eds.), *Handbook of governance in small states* (pp. 233–247). Routledge.

Caribbean Tourism Organization. (2022, Jan. 13). Caribbean tourism remains hopeful of gradual rebound. Available: https://www.onecaribbean.org/caribbean-tourism-industry-remains-hopeful-of-gradual-rebound-despite-onset-of-omicron-variant/

Castro, M. C., Gurzenda, S., Turra, C. M., Kim, S., Andrasfay, T., & Goldman, N. (2021). Reduction in life expectancy in Brazil after COVID-19. *Nature Medicine*, *27*(9), 1629–1635.

Cocklin, C., & Keen, M. (2000). Urbanization in the Pacific: Environmental change, vulnerability, and human security. *Environmental Conservation*, 27(4), 392–403.

Craigwell, R., & Wright, A. (2012). Explaining unemployment in the Caribbean again. *International Journal of Business and Social Science*, 4(9), 263–273.

de Miranda, R. L., dos Santos, L. F. I., Gomes, G., & dos Santos Parisotto, I. R. (2021). Competitiveness influence on global innovation of nations: A cross-sectional analysis. *Independent Journal of Management & Production*, *12*(4), 964–978.

Eastern Caribbean Central Bank (ECCB). (2023). Annual Consumer Price Index. Accessed: https://www.eccb-centralbank.org/p/consumer-price-index-2

Farbotko, C., McMichael, C., Dun, O., Ransan-Cooper, H., McNamara, K. E., & Thornton, F. (2018). Transformative mobilities in the Pacific: Promoting adaptation and development in a changing climate. *Asia & the Pacific Policy Studies*, *5*(3), 393–407.

Ferdinand, M., Oostindie, G., & Veenendaal, W. (2020). A global comparison of non-sovereign island territories: The search for 'true equality'. *Island Studies Journal*, *15*(1), 43–66.

Ferguson, C. E., Tuxson, T., Mangubhai, S., Jupiter, S., Govan, H., Bonito, V., Alefaio, S., Anjiga, M., Booth, J., Boslogo, T., Boso, D., Brenier, A., Caginitoba, A., Ciriyawa, A., Fahai'ono, J. B., Fox, M., George, A., Eriksson, H., et al. (2022). Local practices and production confer resilience to rural Pacific food systems during the COVID-19 pandemic. *Marine Policy,* 137, 104954. https://doi.org/10.1016/j.marpol.2022.104954

Grydehøj, A. (2014a). Guest Editorial Introduction: Understanding island cities. *Island Studies Journal*, *9*(2), 183-190.

Grydehøj, A. (2014b). Constructing a centre on the periphery: urbanization and urban design in the island city of Nuuk, Greenland. *Island Studies Journal*, *9*(2), 205–222.

Grydehøj, A., & Swaminathan, R. (2018). Cities and urbanisation. In G. Baldacchino (Ed.), *The Routledge international handbook of island studies* (pp. 312–323). Routledge.

Guillén, V. I. N., & Deckert, C. (2021). Cultural influence on innovativeness-links between "The Culture Map" and the "Global Innovation Index". *International Journal of Corporate Social Responsibility, 6*(1), 1–12.

Gygli, S., Haelg, F., Potrafke, N., & Sturm, J.-E. (2019). The KOF globalisation index: Revisited. *Review of International Organizations*, *14*(3), 543–574. https://doi.org/10.1007/s11558-019-09344-2

Lewis, M., Herron, L. M., Chatfield, M. D., Tan, R. C., Dale, A., Nash, S., & Lee, A. J. (2023). Healthy Food Prices Increased More Than the Prices of Unhealthy Options during the COVID-19 Pandemic and Concurrent Challenges to the Food System. *International Journal of Environmental Research and Public Health*, *20*(4), 3146.

Liu, X., Ornelas, E. and Shi, H. (2022). The trade impact of the COVID-19 pandemic. *The World Economy*. https://onlinelibrary.wiley.com/doi/10.1111/twec.13279

McGrath, B. (2021). Island as urban artifact/archipelago as urban model. *Island Studies Journal*, *16*(1), 81–100.

Mycoo, M., Wairiu, M., Campbell, D., Duvat, V., Golbuu, Y., Maharaj, S., Nalau, J., Nunn, P., Pinnegar, J., and Warrick, O. (2022). Small Islands. In: *Climate Change (2022). Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (eds.),* [Pörtner, H.-O., Roberts, D.C., Tignor, M., Poloczanska, E. S., Mintenbeck, K., Alegría, A., Craig, M., Langsdorf, S., Löschke, S., Möller, V., Okem, A., Rama B. Cambridge University Press, Cambridge, UK and New York, NY, USA: 2043–2121. https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter15.pdf

Nagabhatla, N., Pouramin, P., Brahmbhatt, R., Fioret, C., Glickman, T., Newbold, K. B., & Smakhtin, V. (2020). Water and migration: A global overview [UNU-INWEH Report Series, no. 10]. United Nations University: Institute for Water, Environment and Health.

Ozili, P. K., & Arun, T. (2023). Spillover of COVID-19: impact on the Global Economy. In *Managing Inflation and Supply Chain Disruptions in the Global Economy* (pp. 41–61). IGI Global.

Parra-Torrado, M. (2014). Youth unemployment in the Caribbean. World Bank. https://openknowledge.worldbank.org/handle/10986/18999

Putri, H., & Salim, W. (2020). The Maritime Silk Road's potential effects on outer island development: The Natuna Islands, Indonesia. *Island Studies Journal*, *15*(2), 155–172.

Rampengan, M. M. F., Law, L., Gaillard, J. C., Margules, C., Boedhihartono, A. K., & Sayer, J. (2018). Mobility and livelihoods: A small island perspective. In D. Paton & S. Sagala (Eds.), *Disaster risk reduction in Indonesia: Environmental, social and cultural aspects* (pp. 68–81). Charles T. Thomas Ltd.

Randall, J. E., & Boersma, A. (2020). Editorial introduction: Sharing stories of island life, governance, and global engagement: Research from a conference on island states and territories. *Small States & Territories*, *3*(1), 117–122.

Randall, J. E. (2021). Guest editorial: Sustainable development across small island states and subnational island jurisdictions: The role of public perception. *Small States & Territories*, *4*(2), 279–284.

Randall, J. E. (2022). *Annual report on global islands, 2021*. Canada: Island Studies Press.

Rashid, H., Ng, P. L., Cheng, H. W. J., & Grozdanic, A. (2020). The COVID-19 pandemic puts small island developing economies in dire straits.

Rojer, G. (2021). Rising from the ashes of the pandemic: The case of the Dutch Caribbean. *Small States & Territories*, *4*(1), 125–136.

Riley, J. C. (2005). Estimates of regional and global life expectancy, 1800–2001. *Population and Development Review, 31*(3), 537–543.

Rasmussen, R. O. (2000). Formal economy, renewable resources and structural change in West Greenland. *Études/Inuit/Studies*, *24*(1), 41–78.

Shultz, J. M., Sands, D. E., Kossin, J. P., & Galea, S. (2020). Double environmental injustice—Climate change, Hurricane Dorian, and the Bahamas. *New England Journal of Medicine, 382*(1), 1–3.

Smidt, E. and Dorosh, P. (2022). Impact of the COVID-19-driven rise in global rice prices on consumers in Papua New Guinea. In (eds) McDermott, J, and Swinnen, J. *COVID-19 and global food security: 2 years later*. International Food Policy Research Institute

Sutcliffe, S., Lau, J., Barnes, M. L., Mbaru, E., Wade, W., Hungito, I., Muly, S., Wanyonyi, N. Muthiga, A., Cohen, P. J., and Cinner, J. 2023. COVID-19 impacts on food systems in fisheries-dependent island communities. *Ecology and Society 28*(1):1. https://doi. org/10.5751/ES-13769-28010.

Telesford, J. N. (2022). A comparative analysis of measuring island sustainable development through a blue lens. *China Oceans Laws Review*, *18*(2), 47–91.

Trias-Llimós, S., Riffe, T., & Bilal, U. (2020). Monitoring life expectancy levels during the COVID-19 pandemic: Example of the unequal impact of the first wave on Spanish regions. *PloS one*, 15(11), e0241952. https://doi.org/10.1371/journal.pone.0241952

Tsakok, E. (2021 November). The Republic of Mauritius and the African Continental Free Trade Area: Opportunities and challenges in a post-COVID-19 environment. Policy Center for the New South: Policy Brief PB-29/21.

United Nations Environment Programme. (2022). *The human development index 2021/2022.* New York.

Vryonides, M., & Pavlou, V. (2021, February 23–28). Globalization and internationalization of higher education: The case of Cyprus [Conference paper]. IV ISA Forum of Sociology, Porto Alegre, Brazil. https://isaconf.confex.com/isaconf/forum2020/meetingapp.cgi/Paper/115387

Weir, T. (2020). Adaptation in small islands: Research themes and gaps. In W. L. Filho (Ed.), *Managing climate change adaptation in the Pacific region* (pp. 45–68). Springer

Wilkinson, B. (2023, Feb. 9). Caribbean tourism on rebound. Accessed: https://www.caribbeanlife.com/caribbean-tourism-on-rebound/

World Bank. (2023). World Bank country lending groups. Accessed: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups