

# Moving Beyond Income in SIDS: Towards a Multidimensional Vulnerability Index

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# OUTLINE OF THE PRESENTATION

1. Background
2. Vulnerability indices
3. Lessons from COVID-19
4. Data and methodology
5. Results and benchmarking
6. Conclusions

# 1. BACKGROUND

- In 1990, UNDP launched the first *Human Development Report* and **redefined development beyond high-income**
    - Human Development Index (HDI)
  - Now UNDP proposes to **redefine vulnerability beyond low-income**
    - Multidimensional Vulnerability Index (MVI)
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# 1. BACKGROUND

- SIDS face common complex social, environmental and economic development challenges
  - Due to unique geographical context, face limited resources-bases and barriers to integration in global economy:
    - overdependent on imports (incl. food and energy,  $\leq 30\%$  of GDP)
    - heavily dependent on tourism; many SIDS revenues  $> 30\%$  of GDP
    - lack of diversification and heavy dependence on imports make SIDS vulnerable to supply chain disruptions and other external shocks
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# 1. BACKGROUND

- SIDS economies predicted to contract between 8 and 15 percent in 2020, recovery will be long and costly
  - With progress on Agenda 2030 threatened, even more urgent need for a multidimensional vulnerability index reflecting the unique context of SIDS in line with the S.A.M.O.A. Pathway
  - This will enable appropriate responses to endemic challenges of SIDS face including **access to concessional finance and debt restructuring**
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## 2. VULNERABILITY INDICES

- Broad range of vulnerability indices created by a variety of researchers and institutions in past 25 years
  - Some embed resilience in vulnerability, others measure vulnerability as a multidimensional phenomenon
  - Some cover only SIDS, others apply to developing countries  
→ E.g. Scandurra et. al. (2018) use 32 variables for 33 SIDS
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## 2. VULNERABILITY INDICES

EVI is composed of two sub-indices

### Economic Vulnerability sub-index

- Share of agriculture (as well as fishing, forestry, and hunting) in GDP
- Remoteness and landlockedness
- Merchandise export concentration
- Instability of exports of goods and services

### Environmental Vulnerability sub-index

- Share of population in low elevated coast zones
  - Share of population living in drylands
  - Victims of disasters
  - Instability of agricultural production
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## 2. VULNERABILITY INDICES

- While EVI is one of the LDC categories, it is especially relevant for assessing the vulnerability of SIDS (10 of which are also LDCs)
  - Of the 143 countries for which the CDP calculates the EVI (every three years), **9 of the top 25 most vulnerable are SIDS** (and 20 of the top 50)
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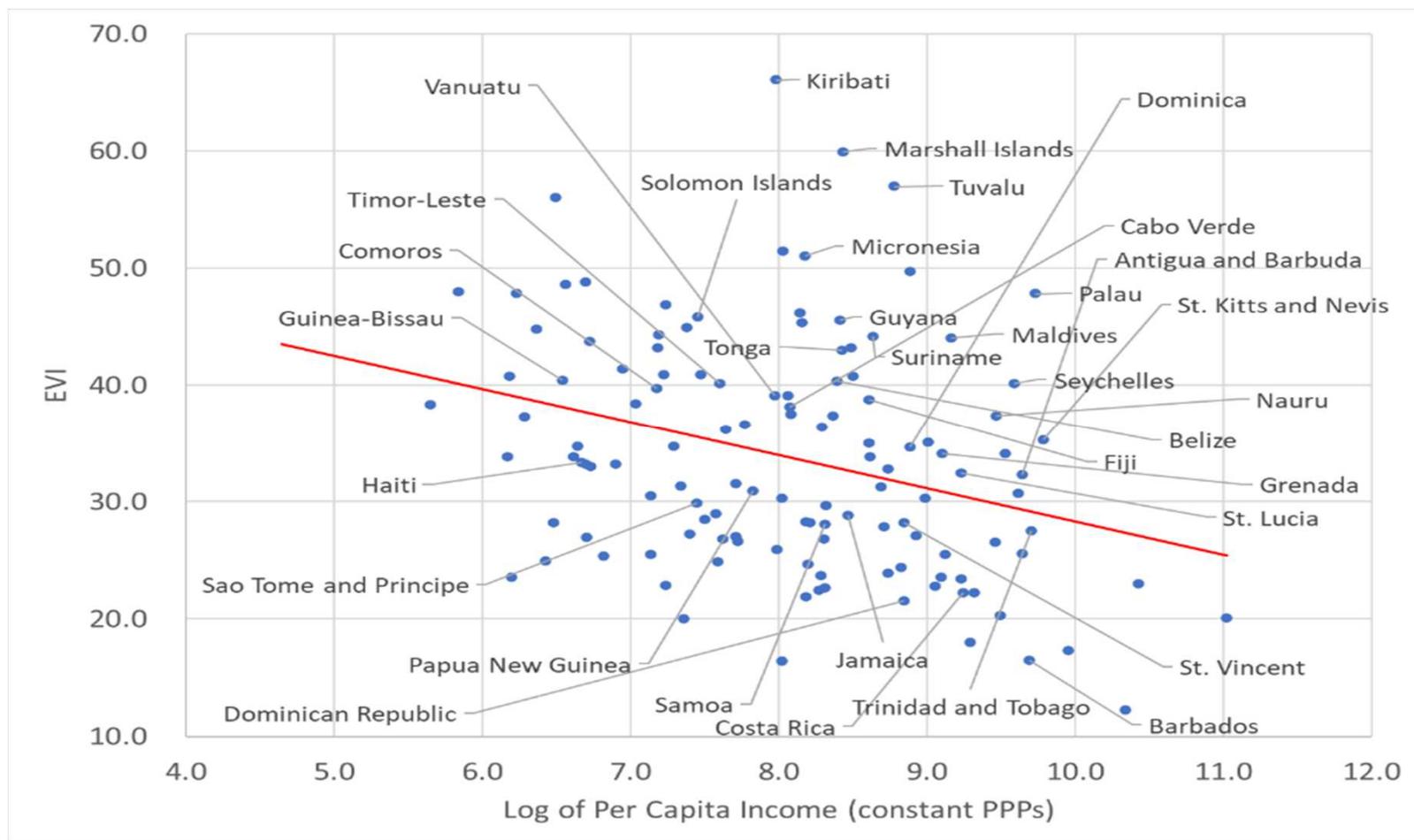
## 2. VULNERABILITY INDICES

Of the many vulnerability indices available, only EVI is an official UN index

Benefits include:

- Consistent coverage across countries (143) and time (since 2000)
  - Methodology agreed by CDP and reviewed by it every three years (other indices only subject to academic peer review)
  - Already used to assess the vulnerability of another group - LDCs - *beyond the income criterion*, exactly the need for SIDS
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## 2. VULNERABILITY INDICES



## 3. LESSONS FROM COVID-19

- COVID-19 has highlighted existing and new dimensions of vulnerability, for countries in general but for SIDS in particular
  - HDRO launched two new dashboards analyzing countries' vulnerability and preparedness to pandemics and other global shocks
  - Of these, the significant and nearly-universal reduction in travel caused by the pandemic (both in terms of travel restrictions and voluntary cancellation of travel) has hit SIDS especially hard
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## 3. LESSONS FROM COVID-19

International tourism, receipts (% of total exports):

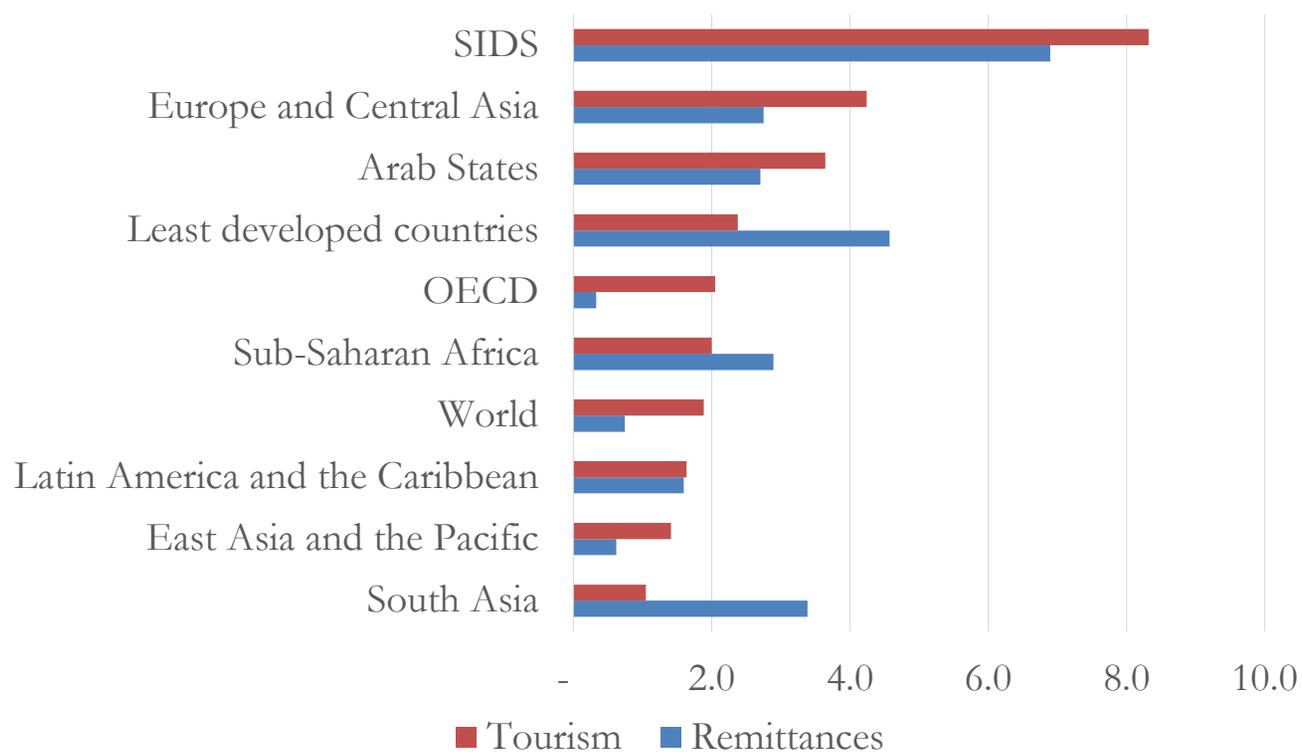
- 23 of top 52 are SIDS (>30% of total exports)
  - The 38 UN SIDS derive 42% of all their export revenues from inbound tourism (vs. 11% for all other developing countries)
  - SIDS are the only group which has High Vulnerability in these dashboards
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## 3. LESSONS FROM COVID-19

SIDS are also more dependent on certain inflows than others:

- **Personal remittances** account for 7.6% of GDP in SIDS, compared to 4.8% in other developing countries (ODC)
  - **FDI** accounts for 5.5% of GDP in SIDS compared to 4.3% in ODC
  - FDI in SIDS is often tied to tourism, so global shocks such as the COVID-19 pandemic can have a double-impact on these countries due to travel restrictions – less export revenues (from tourism) and less FDI at the same time.
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## 3. LESSONS FROM COVID-19



## 3. LESSONS FROM COVID-19

Other vulnerability indicators:

Biodiversity, but:

- not a direct measure of the vulnerability of people
- partly a natural endowment, not purely a policy variable (Brazil, Colombia, China and Indonesia are top 4)
- negligible statistical significance (PCA analyses)

Debt

- total debt service (% of exports) – SIDS 3.6%, other developing countries 4.6%
  - external debt stocks (% of GNI) – SIDS 50.6%, other developing countries 45.5%
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## 4. DATA AND METHODOLOGY

MVI 5.0:

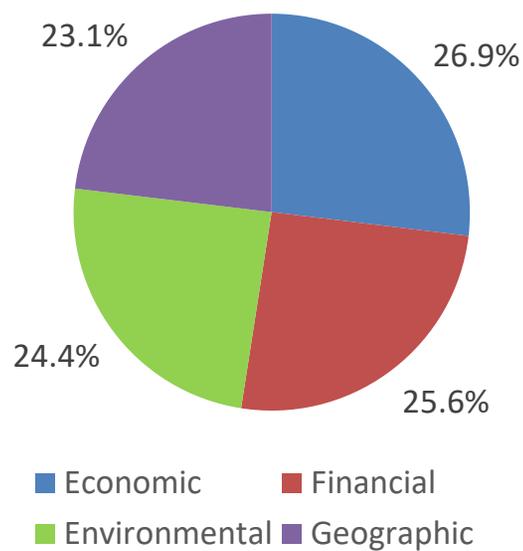
- Eight EVI indicators + tourism + remittances + FDI
- Principal Components of the MVI Dataset:

Component	Indicators
1. Economic vulnerability	<ul style="list-style-type: none"> <li>• Export concentration</li> <li>• Export instability</li> <li>• Agricultural instability</li> </ul>
1. Financial vulnerability	<ul style="list-style-type: none"> <li>• Tourism revenues as share of exports</li> <li>• Remittances as percentage of GDP</li> <li>• FDI inflows as percentage of GDP</li> </ul>
1. Environmental vulnerability	<ul style="list-style-type: none"> <li>• Agriculture and fishing as share of GDP</li> <li>• Victims of disasters</li> </ul>
1. Geographic vulnerability	<ul style="list-style-type: none"> <li>• Remoteness</li> <li>• Share of population in low elevated coast zones</li> <li>• Share of population living in drylands</li> </ul>

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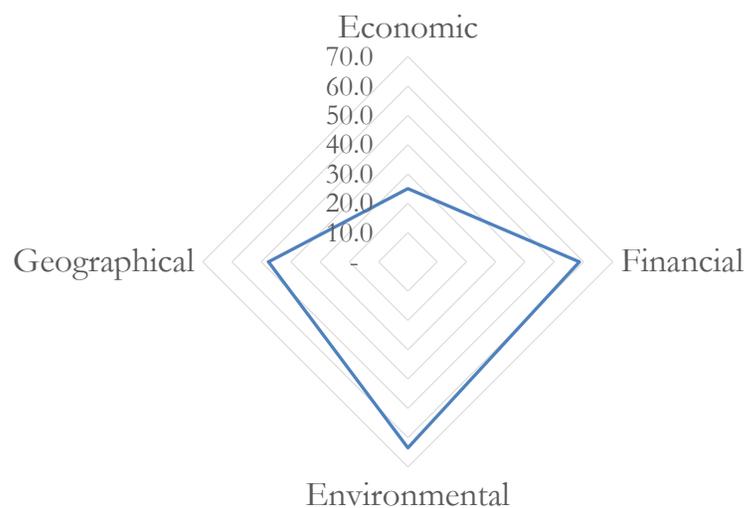
## 4. DATA AND METHODOLOGY

Percentage of Variance Explained by Principal Component



## 4. DATA AND METHODOLOGY

A Vulnerability Decomposition for Tonga:



## 5. RESULTS AND BENCHMARKING

- MVI can be calculated for 126 countries from the EVI dataset (34 of 38 UN SIDS)
- Shows a higher vulnerability in SIDS than the EVI

	EVI	MVI
SIDS in Top 25	9	14
SIDS in Top 50	20	28

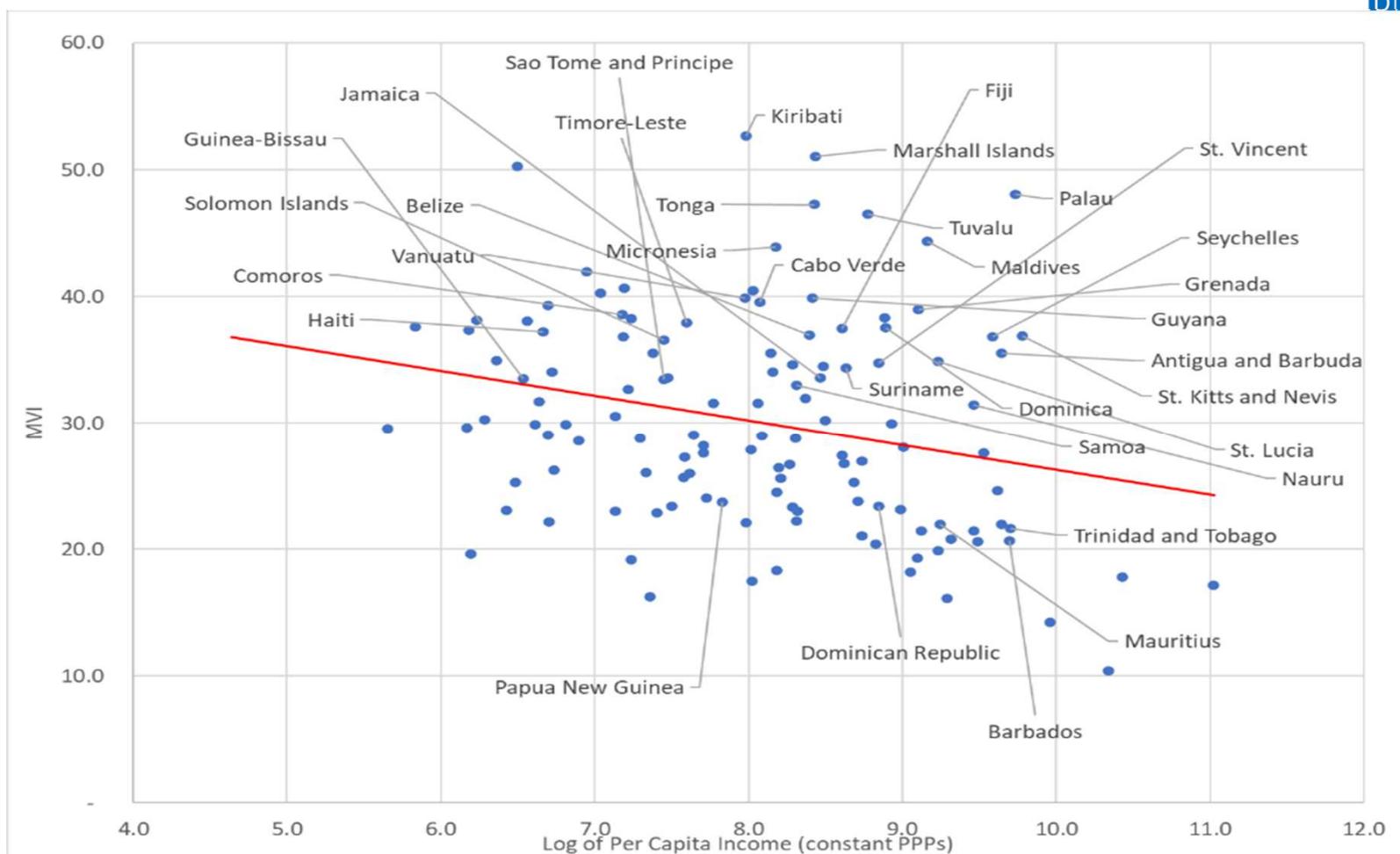
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## 5. RESULTS AND BENCHMARKING

In terms of the *degree* of vulnerability, the 126 countries in the sample can be grouped in four quartiles:

- Low Vulnerability: MVI values below 21. There is only one SIDS — Barbados — among these 17 countries
  - Medium Vulnerability: MVI values between 21 and 32. Of these 59 countries, only five (8.5%) are SIDS (Papua New Guinea, Dominican Republic, Mauritius, Nauru, and Trinidad and Tobago)
  - High Vulnerability: MVI values between 32 and 43. Of these 42 countries, 21 (50%) are SIDS
  - Very High Vulnerability: MVI values greater than 43. Of these 8 countries, 7 (87.5%) are SIDS
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## 5. RESULTS AND BENCHMARKING





## 5. RESULTS AND BENCHMARKING

Of the 34 SIDS:

- 24 increased their vulnerability ranking from EVI to MVI
- two countries did not change in rankings
- only eight have decreased in their vulnerability ranking

The two biggest *increases* in vulnerability ranking:

- Grenada's (57 to 17) – due to the inclusion of data on tourism, which account for 83% of the country's exports (third-highest dependency among developing countries) and FDI (12.6% of GDP)
  - St. Vincent (82 to 39) - due its high reliance on FDI (15.2% of GDP) and tourism (73.6% of total exports)
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## 5. RESULTS AND BENCHMARKING

The two biggest *decreases* in vulnerability ranking:

- Suriname (21 to 42) is hardly dependent on tourism (4.1% of export revenues), remittances (0.1% of GDP) or FDI (3.4% of GDP)
- Papua New Guinea (71 to 92) is even less dependent on tourism (0.1% for export revenues) and remittances (0% of GDP), and receives only 1.4% of its GDP in FDI

On average, however:

- SIDS increase their vulnerability ranking by 12 positions
  - Non-SIDS dropped in the MVI rankings by 4 positions
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## 5. RESULTS AND BENCHMARKING

- The MVI can be used for evaluating countries' eligibility for concessional financing. Currently only low-income countries (LICs) or least-developed countries (LDCs) are eligible
  - The non-LDC SIDS have much higher average borrowing costs (5.0% vs. 0.75% in 2020)
  - We estimate the implied annual savings if non-LDC SIDS were eligible for the same average rate as LDC-SIDS (0.75)
  - ***The average non-LDC SIDS would save close to 1.5% of GDP annually*** if their long-term external public and publicly guaranteed (PPG) debt was funded at the average LDC-SIDS interest rate, i.e. if the MVI was used instead of just income levels
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## 6. CONCLUSIONS

- The MVI updates the EVI using three dimensions which have been shown to be critical by the COVID-19 pandemic
  - It reflects economic, environmental, geographic, and financial vulnerabilities
  - Such a tool could help enable access to concessional finance to support SIDS in addressing
    - overwhelming debt burdens
    - sovereign rating downgrades underway or forthcoming
  - Such a move is essential if SIDS are to overcome the socio-economic shocks caused by the COVID-19 pandemic while safeguarding progress made on the 2030 Agenda and S.A.M.O.A. Pathway
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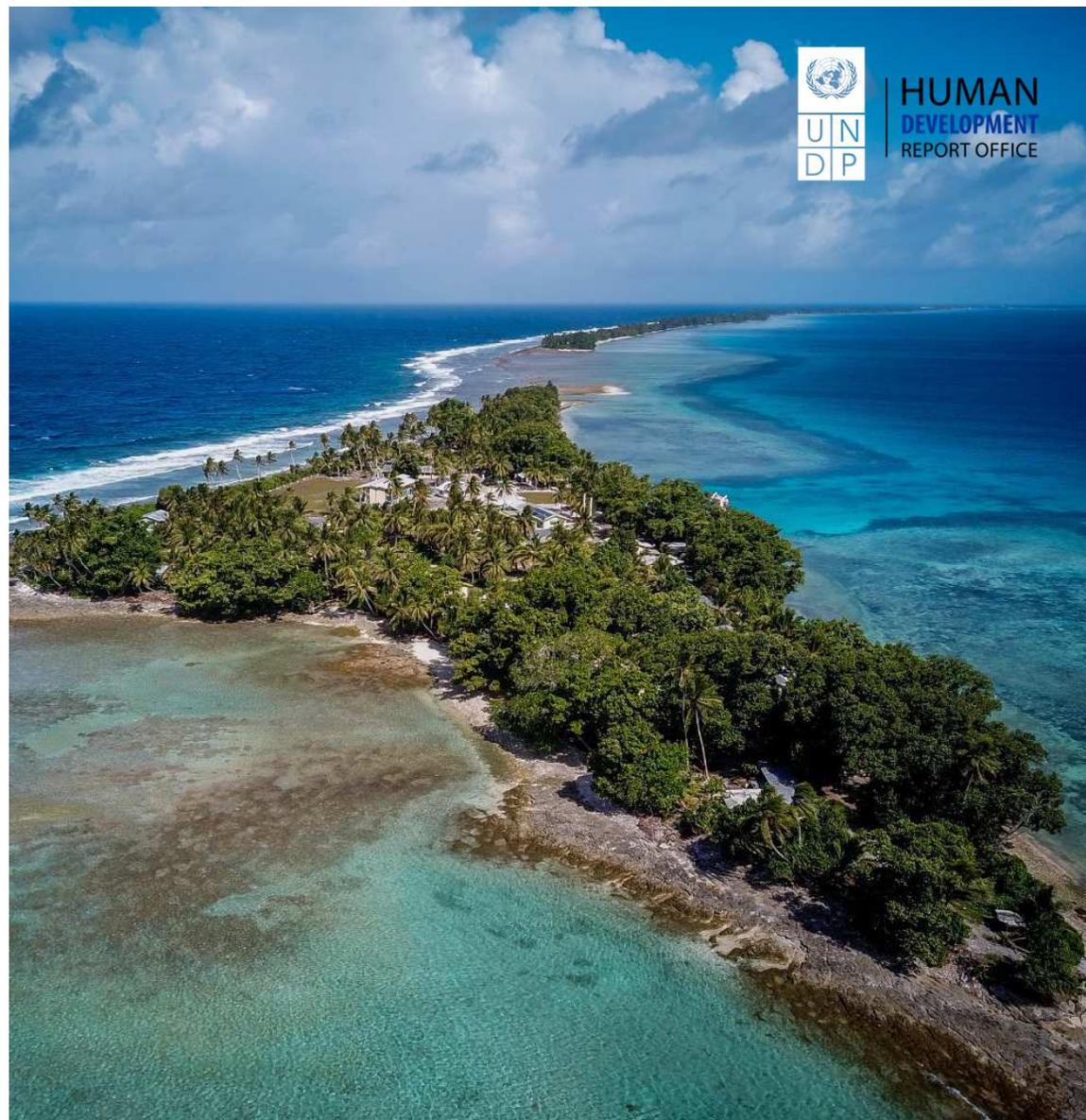
# THANK YOU

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