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)
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:
  o overdependent on imports (incl. food and energy, <=30% of GDP)
  o heavily dependent on tourism; many SIDS revenues >30% of GDP
  o lack of diversification and heavy dependence on imports make SIDS vulnerable to supply chain disruptions and other external shocks
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
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
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
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)
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
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
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
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.
3. LESSONS FROM COVID-19

- SIDS
- Europe and Central Asia
- Arab States
- Least developed countries
- OECD
- Sub-Saharan Africa
- World
- Latin America and the Caribbean
- East Asia and the Pacific
- South Asia

Tourism vs. Remittances
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%
4. DATA AND METHODOLOGY

MVI 5.0:

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Indicators</th>
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<tbody>
<tr>
<td>1. Economic vulnerability</td>
<td>• Export concentration</td>
</tr>
<tr>
<td></td>
<td>• Export instability</td>
</tr>
<tr>
<td></td>
<td>• Agricultural instability</td>
</tr>
<tr>
<td>1. Financial vulnerability</td>
<td>• Tourism revenues as share of exports</td>
</tr>
<tr>
<td></td>
<td>• Remittances as percentage of GDP</td>
</tr>
<tr>
<td></td>
<td>• FDI inflows as percentage of GDP</td>
</tr>
<tr>
<td>1. Environmental vulnerability</td>
<td>• Agriculture and fishing as share of GDP</td>
</tr>
<tr>
<td></td>
<td>• Victims of disasters</td>
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<tr>
<td>1. Geographic vulnerability</td>
<td>• Remoteness</td>
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<td></td>
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</tr>
</tbody>
</table>
4. DATA AND METHODOLOGY

Percentage of Variance Explained by Principal Component

- Economic: 26.9%
- Financial: 25.6%
- Environmental: 24.4%
- Geographic: 23.1%
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

<table>
<thead>
<tr>
<th></th>
<th>EVI</th>
<th>MVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIDS in Top 25</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>SIDS in Top 50</td>
<td>20</td>
<td>28</td>
</tr>
</tbody>
</table>
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
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)
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
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.
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.
THANK YOU

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