Advance Unedited Version

United Nations

HIGH LEVEL PANEL ON THE DEVELOPMENT OF A MULTIDIMENSIONAL VULNERABILITY INDEX

FINAL REPORT

ADVANCE UNEDITED VERSION

United Nations President of the General Assembly's High-Level Panel on the development of a Multidimensional Vulnerability Index

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ACRONYMS AND ABBREVIATIONS

ACLED	Armed Conflict Location and Event Data
ADB	Asian Development Bank
AOSIS	Alliance of Small Island States
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
CDP	Committee for Development Policy
CEPII	Centre d'Études Prospectives et d'Informations Internationales
CRED	Centre for Research on the Epidemiology of Disasters
CRU TS	Climatic Research Unit Time Series
DAC	Development Assistance Committee
ECOSOC	Economic and Social Council
EM-DAT	Emergency Events Database
EVI	Economic Vulnerability Index
FAO	Food and Agricultural Organization
GDEM	Global Digital Elevation Model
GDP	Gross Domestic Product
GNI	Gross National Income
GNI pc	Gross National Income per capita
HICs	High Income Countries
HDI	Human Development Index
HDRO	Human Development Report Office
IHME	Institute for Health Metrics and Evaluation
IATF	Inter-Agency Task Force on Financing for Development
IFIs	International Financial Institutions
INCAF	International Network on Conflict and Fragility
INFFs	Integrated National Financing Frameworks
IPU	Inter-Parliamentary Union
IQR	Interquartile Range
LECZ	Low-Elevated Coastal Zone
LDCs	Least Developed Countries
LICs	Low Income Countries
LLDCs	Landlocked Developing Countries
LMICs	Lower Middle-Income Countries
MDBs	Multilateral Development Banks
MPI	Multidimensional Poverty Index
MVI	Multidimensional Vulnerability Index
NDPs	National Development Plans
ODA	Official Development Assistance

OECD	Organisation for Economic Co-operation and Development
UN-OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
PGA	President of General Assembly
RMS	Root Mean Square
SDGs	Sustainable Development Goals
SIDS	Small Island Developing States
SITC	Standard International Trade Classification
UMICs	Upper Middle-Income Countries
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHABITAT	United Nations Human Settlements Programme
UNHCR	United Nations High Commissioner for Refugees
UNODC	United Nations Office on Drugs and Crime
UNSD	United Nations Statistics Division
VNRs	Voluntary National Reviews
VRCP	Vulnerability and Resilience Country Profiles
WHO	World Health Organization

FOREWORD

[Co-Chairs text to be added]

EXECUTIVE SUMMARY

Introduction

The international community has now acknowledged vulnerability as a serious obstacle to development due to the damage caused by exogenous shocks and stressors to which countries are increasingly being exposed. These shocks span diverse domains such as terms of trade fluctuations, natural disasters, supply disruptions, conflicts, civil unrest, and unprecedented shocks such as the COVID-19 pandemic.

It is evident that low national income, often measured by Gross National Income per capita (GNI pc), is a weak measure of development, material welfare, or well-being. This is particularly true for countries facing high risks of external shocks and stressors, especially if they also lack resilience. However, there is currently no international, widely accepted, quantitative benchmark to measure structural vulnerability or lack of resilience across multiple dimensions of sustainable development at the national level.

With few exceptions, access to concessional financing windows depends on meeting lower income thresholds (GNI pc). This means that vulnerable countries often lack access to affordable development support such as concessional assistance to help them meet their sustainable development goals while coping with, and adapting to, their structural vulnerabilities. A widely accepted Multidimensional Vulnerability Index (MVI) holds the potential to better guide country development and donor assistance policies, aid in the diagnosis of development challenges and in the identification of nations in need of heightened international assistance before a crisis hits.

The work of the High-Level Panel of experts to develop the MVI seeks to fill in this gap. The Panel, which began work in March 2022, took a systematic approach to consultation and outreach, gathering inputs and suggestions from diverse stakeholders including potential user groups, academics, and Member States. This Report summarizes the results of the Panel's deliberations and offers recommendations.

The proposed structure of the MVI aligns with the guiding principles outlined by the Secretary General in paragraphs 80-83 of A/76/211, while incorporating an additional component, the Vulnerability and Resilience Country Profiles (VRCP). This two-tiered structure provides:

- a quantitative assessment of structural vulnerability and resilience using a common methodology for all developing countries, which is presented via a summary index number to rank countries and a dashboard showing individual country scores on the component parts (the MVI score); and
- a more detailed, tailored, and individualized characterization of a country's vulnerability and resilience factors, including non-structural resilience prepared by individual countries (the VRCP).

Key principles guiding MVI index construction

In developing the MVI index, the Panel followed a set of guiding principles provided by the Secretary-General's Report (A/76/211) as follows:

- Multidimensionality: Indicators used in the assessment of structural vulnerability should cover all three dimensions of sustainable development, namely economic, environmental, and social.
- Universality: Although the MVI was originally proposed by the SIDS, it was recognized that to be a useful tool, the design of the index should capture the vulnerabilities of all developing countries.
- Exogeneity: The index must clearly differentiate between policy-induced and exogenous (or inherited) factors to reflect the structural and inherent challenges faced by countries, independent of the political will of their governments.
- Availability: The index should utilize available, recognized, comparable, and reliable data.
- Readability: The design of the index should be clear and easily comprehensible.

It should be noted that the primary objective of the MVI index is not to reflect overall progress toward the SDGs, but to provide a robust, acceptable, and simplified assessment of vulnerability that can be effectively operationalized by and for the benefit of vulnerable countries.

Conceptual framework for the MVI

The Panel defined a conceptual framework for the MVI which captures two pillars or domains of vulnerability: (i) structural vulnerability, linked to a country's exposure to adverse external shocks and stressors, as well as (ii) (lack of) structural resilience, which is associated with the (lack of) capacity of a country to withstand such shocks. Within the pillars of the MVI, the conceptual framework elaborates three dimensions of sustainable development as they apply to each pillar. The following definitions were employed in the framework

- **Economic vulnerability** - the risk of harm from exposure to adverse external economic shocks.
- **Environmental vulnerability** - the risk of harm from exposure to natural hazards. Natural hazards may result from structural vulnerability to climate change and anthropogenic or socio natural shocks and stressors that are exogenous in origin.
- **Social vulnerability** - the risk of harm from exposure to social shocks.
- **Structural economic resilience** - the inherent economic capabilities and economic capital of a country that strengthen the economy's ability to withstand and recover from adverse events.
- **Structural environmental resilience** - the inherent environmental capital of a country, including the ecological resources, infrastructure, and systems that contribute to reducing vulnerability to environmental shocks and stressors.

- **Structural social resilience** - the inherent social capabilities and social capital within a country including social cohesion, social institutions, demographic structure, and human capital that enhance the capacity to withstand and adapt to shocks and stressors.

Indicator selection and index construction

To simplify index construction and indicator selection, bridging the gap between the broad definitions of the framework and the selection of specific indicators, the MVI process defined each dimension using concepts. Each dimension of vulnerability and resilience is characterized by three concepts (18 in total). Each concept is measured through the selection of the fewest possible indicators, with each indicator acting as a proxy for their associated concept rather than representing a specific measure of vulnerability and resilience.

The Panel sought to select Indicators of the highest quality, universally available, but providing the best measure of the relevant concept and dimension. UN data was prioritized. In instances where relevant data was not found within the UN system, indicators were used that have been vetted by other UN entities or where strong evidence of the quality of the selected data existed. Potential indicators with missing data for more than 10% of developing countries were excluded.

Once the indicators were selected, they were then combined into one single metric of vulnerability. This required the construction of a composite index, including rescaling, aggregation, and weighting. The Panel followed widely accepted standards and procedures as follows:

- For each indicator, outliers were detected, and all values rescaled to a value between 0 and 100.
- Indicators were aggregated and averaged using a quadratic or root mean square (RMS) approach to ensure that the heterogeneity in vulnerability, which characterizes each country was not lost through averaging. This technique also reflects the lack of substitutability between concepts (that is, low environmental vulnerability does not cancel out high economic vulnerability).
- For simplicity's sake and in the absence of clear theoretical justifications, equal weights were applied, meaning that all components of the index are given equal importance at every level of aggregation.

A series of validity checks verified that the constructed index effectively represents structural vulnerability of countries. Key findings included:

- Country scores on the two dimensions were moderately correlated, meaning that countries with high structural vulnerability were more likely to have low structural resilience (high lack of resilience) and vice versa. This was especially true for low income countries (LICs).

- MVI scores were not correlated with income, indicating that the MVI can be a useful complement to country income measures such as the GNI per capita. However, LICs were more likely to be found in the top 20% of MVI scores.
- The MVI does not discriminate against small countries, an important point given that the MVI was originally proposed by the SIDS. Indeed, 70% of all SIDS have scores in the top 50% of the distribution (above the median).

The VRCP

Vulnerable countries have the option of complementing their MVI scores with a VRCP, which provides a detailed, multi-dimensional vulnerability and resilience characterization at national level, and identifies priority, integrated, and costed interventions for resilience building at national level. VRCPs enhance, inform, and contribute to the formulation, implementation, and monitoring cycle of National Development Planning processes, as well as guiding donors on country needs, policies, resources, and priorities for assistance. To support country VRCP preparation, including capacity building needs, a team dedicated to supporting the VRCPs should be formed and hosted by the MVI Secretariat / custodian body.

MVI Governance

The MVI – both the index and the VRCP – should be living tools, updated as data and methodology on vulnerability measurement and on the causes and consequences of vulnerability improve. The Panel, charged with offering recommendations on appropriate governance arrangements, recommends that two distinct bodies be constituted:

- an MVI Secretariat, with similar arrangements to those employed by the CDP Secretariat (UNDESA), the UNDP Human Development Report Office (HDRO), or the OECD; and
- The Independent MVI Advisory Review Panel, mirroring the arrangements adopted by the UNCTAD's PCI High Level Advisory Body, the UNDP's Statistical Advisory Board (SAB) and or by the ECOSOC's CDP.

MVI uses and next steps

Securing consensus and broad support for the MVI framework is of critical importance, as this will be the first step in galvanizing action toward its use. It is a relevant input to the preparatory process of the fourth International Conference on Small Island Developing States and other internationally agreed conferences, processes, and meetings. The international community has advocated for the inclusion of vulnerability in determining eligibility for development assistance including concessional finance, ODA, and debt relief and the MVI is a credible complement to current approaches. Next steps toward broad usage could include:

- The MVI framework proposed in this report should be adopted by the General Assembly as the basis of any future works, and a decision taken on the future custodial arrangements and governance.

- Donors, including IFIs, should be encouraged to explore how the MVI could be incorporated into existing policies and practices, pursuing a common approach to the extent possible.

- Assessment of country external debt sustainability and the need for concessional debt restructuring could use the MVI in addition to current, mostly income-based, assessments.

CHAPTER 1 – SETTING THE SCENE

I. The case for a new quantitative benchmark for vulnerability

1. Assessment of a country's economic development, resources for investment, and the need for international assistance are often determined by a country's national income and assets, measured by its Gross National Income per capita (GNI pc). One rationale for this, is that it has proven to be a useful, readily available indicator that is often closely correlated with other, nonmonetary measures of the quality of life[1], making this measure particularly attractive for allocation of international development assistance resources. Simply put, higher GNI pc implies lesser assistance needs. However, the reality for many countries, particularly developing countries, is far more complex. While GNI pc is useful for examining a country's income, it is not without limitations. These include its inability to account for inflation, income disparity, poverty, wealth, or savings. GNI pc measures a country's income flow at a specific time, so it ignores potential income fluctuations, including those stemming from external shocks and stressors. Recovering from the negative impact(s) of shocks and stressors, or simultaneous multiple shocks, adversely impacts current income and potential future income, slowing the pace of development or even reversing it, depending on the specific impacts and country situation. Countries prone to external shocks and stressors are structurally vulnerable, and in theory, while wealthier countries should typically have more resources to manage the impacts of shocks and stressors, in practice, many countries exhibit much higher levels of vulnerability than their income levels would suggest. Such countries deserve special assistance, particularly if they also lack inherent resilience.

2. International efforts to address increasingly complex and interrelated development needs and their associated resource requirements have led to the establishment of an international financial architecture comprising several stakeholders and numerous financing instruments, tools, or modalities. Access to or eligibility for many of these, are often linked to or determined by a country's GNI pc. The system has been further complicated by the many special windows or ad hoc exceptions that have been developed or created, and which are often only triggered by a major external shock and focuses on post shock response, relief, and recovery rather than long term resilience building. While these approaches are useful and are a recognition of the challenges currently experienced by many developing countries in accessing sufficient development resources to meet their sustainable development needs, they have not adequately considered the intricate nature of the interactions between structural disadvantages, especially the multifaceted dimensions of vulnerability, and the pursuit of sustainable development.

[1] https://datahelpdesk.worldbank.org/knowledgebase/articles/378831-why-use-gni-per-capita-to-classify-economies-into .

3. Notably Small Island Developing States (SIDS), who despite being declared by the international community as being among the most vulnerable nations worldwide, often lack access to sufficient development resources, including concessional finance or adequate mechanisms for debt relief. Relying too heavily on GNI pc as a key criterion for eligibility or as the primary proxy to evaluate a country's requirements for development support, including concessional finance, obscures a significant heterogeneity in terms of structural vulnerability across countries. It also does not effectively facilitate the targeted allocation of resources to address the specific challenges arising from structural vulnerability.

4. Currently, there is no international consensus on how to define vulnerability or how best to support vulnerability reduction or resilience building. While there have some efforts to improve its measurement[2] and to assess related needs in developing countries, these metrics have all shown limitations such as their choice of indicators, data availability, the metrics used, and discrepancies across metrics. Consequently, there is no widely accepted, international quantitative benchmark to measure structural vulnerability or lack of resilience across multiple dimensions of sustainable development at the national level that can be used to complement GNI pc. While the international community, including the International Financial Institutions (IFIs), has recognized that GNI pc fails to fully encompass the development challenges faced by developing countries, the concept of vulnerability has yet to be operationalized, due to the absence of a reliable and widely accepted metric. Achieving consensus on an appropriate metric that accurately assesses the nuances of vulnerability i.e. multi-dimensional vulnerability across all developing countries, applied in a complementary manner with GNI pc, could assist both developing countries and the international community in the development and adoption of more informed policies and strategies for building and sustaining long-term resilience.

5. In 2020, motivated by the pressing economic and debt challenges in the wake of the COVID-19 pandemic, Belize, then the Chair of the Alliance of Small Island States (AOSIS), addressed the UN Secretary-General reiterating the need to advance work on a Multi-dimensional Vulnerability index (MVI). Subsequently, the General Assembly in paragraph 8(a) of resolution 75/215, requested specific recommendations from the Secretary-General, including on, the potential development and use of such an index for SIDS. In his ensuing report,[3] the Secretary-General affirmed that developing such a MVI is possible, but for it to achieve consensus, its development must be guided by the principles of multidimensionality, universality, exogeneity, availability, and readability[4] (see definitions in paragraph 11), and should be led and driven by member States, in a spirit of partnership.

[2] Various metrics exist e.g. the Economic and Environmental Vulnerability Index (EVI) developed by the UN Committee for Development Policy (CDP), and metrics designed to capture climate stress (global climate risk index) and disaster risk (WRI).
[3] A/76/211
[4] Ibid paras 81-82

II. Description of the process and of the HLP

6. The guidance provided by the Secretary-General's Report (A/76/211) was based on a comprehensive review of various existing indices and academic literature on vulnerability indices. Regarding finalization of the MVI, the Report stated:

> *88. Work on the index by the General Assembly should be carried forward by a high-level expert panel, supported by the Secretariat, headed by two eminent persons, one of whom from a small island developing State, both appointed by the President of the General Assembly, tasked with finalizing the index. Panel members could be drawn from senior policymakers, academia, civil society and the public and private sectors, with due consideration given to geographical and gender balance. They should have relevant knowledge and experience of the development challenges facing vulnerable countries and development finance.*

7. In actioning the Secretary-General's recommendations, the General Assembly decided to establish a representative high-level panel of experts to be co-chaired by two eminent persons, one of whom should be from a SIDS, to carry forward the work to finalize the MVI, and further tasked the President of the 76th General Assembly with establishment of this Panel.

8. In February 2022, following a nomination period among member States, the PGA appointed a 12-member High Level Panel as follows:

H.E Mr. Gaston Browne, Prime Minister of Antigua & Barbuda (Co-Chair)
H.E. Ms Erna Solberg, former Prime Minister of Norway (Co-Chair)
Prof. Lino Briguglio (Malta)
Ms. Natalie Cohen (Australia)
Dr. Omar El-Arini (Egypt)
Dr. Louise Fox (USA)
Prof. Edgar Gutiérrez-Espeleta (Costa Rica)
Ms. Xiheng Jiang (China)
H.E. Dr. Fatumanava Pa'olelei Luteru, (Samoa)
Prof. Leonard Nurse (Barbados)
H.E Mr. José Luis Rocha (Cape Verde)
Ms. Yee Woan Tan (Singapore)

9. The Panel, guided by its Terms of Reference[5], began its work in March 2022. According to its Terms of Reference, recommendations are to be provided on two key issues as follows:

- a clear and coherent MVI, which needs to consider the principles highlighted in paragraphs 80-83 of A/76/211 and which must comprise a structure, indicators, a precise methodology for weighting and aggregating the indicators, and precise

[5] Available at; https://sdgs.un.org/sites/default/files/2022-07/MVI_Panel_TOR_%202021.pdf

definitions of the main concepts including vulnerability, exposure, shock and resilience; and

- evidence-based recommendations on the most appropriate governance arrangements for the MVI, including modalities for the publication of MVI results and procedures for reviewing and/or revising the MVI and its components.

10. Details on the specific outputs from these two tasks are contained in Chapters 2 and Chapter 6 of this report respectively.

a) Principles guiding MVI development

11. The guiding principles contained in A/76/211 for the design of the MVI are worthy of specific mention, as they have had a significant impact on the technical choices in developing the metric. These are:

Multidimensionality: Indicators used in the assessment of structural vulnerability should cover all three dimensions of sustainable development, (economic, environmental social). Addressing structural vulnerability necessitates the identification of its sources and determinants, requiring conceptual clarity regarding its scope. These three domains of vulnerability align with the commonly referenced three dimensions in the global discourse on sustainable development.

Universality: The design of the index should effectively capture the vulnerabilities of all developing countries.

Exogeneity: The index must clearly differentiate between policy-induced and exogenous (or-inherited) factors to reflect the structural and inherent challenges faced by countries, independent of the political will of their governments.

Availability: The index should utilize available, recognized, comparable, and reliable data.

Readability: The design of the index should be clear and easily comprehensible. The primary objective of the MVI is not to reflect overall progress toward the SDGs, but to provide a robust, acceptable, and simplified assessment of vulnerability that can be effectively operationalized by and for the benefit of vulnerable countries.

b) Challenges faced by the High-level Panel

12. The High-Level Panel, faced several challenges in the course of its work, including the following:

Concepts and Definitions: building a MVI for the very specific purpose of being used for access to development support, including concessional finance, requires well-defined concepts and definitions. In this regard, the MVI had to be designed in a manner that captures structural vulnerability, linked to a country's exposure to adverse external shocks and stressors, as well as with lack of structural resilience, which is associated with the capacity of a country to withstand such shocks **(**these terms are defined in more detail in Chapter 2 of this Report).

Setting the Criteria for the selection of individual indicators: the selected indicators had to be structural rather than policy-induced, to serve as criteria for accessing and allocation of concessional finance.

Defining and appropriately capturing structural resilience: Resilience is generally understood as the capacity of a country to withstand, absorb, recover from, or minimize the adverse effects of shocks or stressors and is often associated with effective public policies, regulations, and policy implementation. However, there is also a structural dimension of resilience that influences these capacities in the long term. These factors are encompassed within the second pillar of the MVI. In other words, the MVI is built on the notion that the risk of harm to a country's sustainable development does not emanate only from exposure to exogenous shocks and stressors but also from the structural capacity of the country to withstand such shocks and stressors.

Data quality. The data needed to derive the indicators had to meet the highest quality standards and be easily available with long-term time series for all developing countries. The process of identifying appropriate indicators for the MVI relied on relevant inputs from the UN system and other agencies, including the Commonwealth Secretariat and the IFIs. In several instances challenges were experienced in acquiring data that met the specified quality criteria. Consequently, some indicators were omitted on these grounds (for further elaboration, refer to the section on limitations and potential future development of the MVI).

Distinguishing between vulnerability and economic development. It was important to first understand and clarify that the MVI is not to be considered as a general index of need or development and that its results must not be equated with income. Even in cases where countries have sufficient resources to invest in resilience building and may reach high income status, their vulnerability remains a threat to their sustainable development. Indeed, the frequency of external shocks or the occurrence of a large and unforeseen adverse event poses threats to the long-term growth and sustainable development of upper middle- and high-income countries that lack structural resilience.

III. The consultative and outreach processes

13. In the course of its work, the Panel took a systematic approach to consultation and outreach beginning with developing and adopting an Advocacy strategy. This strategy was used to guide initial outreach on the MVI.

14. Consultative approaches adopted included the following:

- Gathering inputs and suggestions from diverse stakeholders through formal and informal consultative channels, including comments on the Panel's interim report, discussion papers and presentations and engagements in private and public events to exchange views with relevant constituents[6].
- Holding technical seminars with user groups, academics and others to test proposals and address concerns.
- Convening focused technical sessions with individual Member States and smaller groups to address specific challenges faced by special interest groups e.g., LDCs, MICs.
- Creating a dedicated consultative space to facilitate engagement with IFIs and MDBs.
- Utilizing various tools such as the website and Question and Answer summaries, to communicate the Panel's position on major points received in writing from various stakeholders.

IV. Structure of the Report

15. This report provides a detailed account of the conceptual underpinnings, approach and methodology employed in the design and construction of the index, as well as its potential uses and a proposed governance arrangement for it upkeep. It should be noted that ultimately, the MVI is a new quantitative benchmark to measure structural vulnerability or lack of resilience across multiple dimensions of sustainable development at the national level, and is not meant to replace GNI pc, but rather to supplement it, adding further insight into a country's development needs, including their concessional financing requirements.

16. The MVI has two pillars: structural vulnerability and lack of structural resilience. Each of these two pillars has 3 dimensions: economic, environmental and social resilience, representing the country's inherent and inherited factors. A lower MVI score indicates that a country is relatively less vulnerable compared to its counterparts. However, this does not imply that the country is completely shielded from or immune to the impact of external shocks. It is worth noting that while some countries may possess non-structural capabilities to mitigate their vulnerabilities, their underlying structural vulnerability persists. Therefore, the MVI should be

[6] For example, the ODI event on the MVI; https://odi.org/en/events/putting-the-glasgow-climate-pact-into-action/ and, the Brookings Institution roundtable to discuss technical aspects of the MVI.

regarded as a single measure, albeit a multidimensional one, and serves as a valuable addition to existing measures and discourse.

17. The remainder of the report is organized as follows:

Chapter 2 explains the MVI construction framework. Delving into the core concepts, it distinguishes between structural and non-structural vulnerability and resilience, outlining their respective components.

Chapter 3 presents the methodological approach used to construct the MVI index. It highlights the dimensions, concepts and characteristics of the indicators that make up the MVI. It defines the principles for combining the various data into a composite index. The standardization, aggregation and weighting processes are presented.

Chapter 4 presents some of the key results of the MVI. It examines the validity of the index, showing relationships between vulnerability and lack of resilience, how the index characterizes countries and the relationship of country MVI scores to GNI pc and population. It outlines some of the MVI's limitations. Finally, the chapter presents the MVI data visualization and exploration tool, designed to enhance understanding of the index and facilitate the communication of results.

Chapter 5 is devoted to the presentation of Vulnerability and Resilience Country Profiles (VRCP), the second element of the MVI structure. This instrument provides greater granularity and better characterization of the vulnerability and resilience factors specific to each country. The chapter presents the objectives of the VRCP, its guiding principles and its implementation.

Chapter 6 develops proposals for governance mechanisms for the MVI. This also includes modalities for releasing MVI results and procedures for reviewing and/or revising the MVI and its components.

The last two Chapters present possible uses of the MVI and some recommendations and conclusions, respectively.

CHAPTER 2 – THE MVI FRAMEWORK

I. The two-tiered structure of the MVI

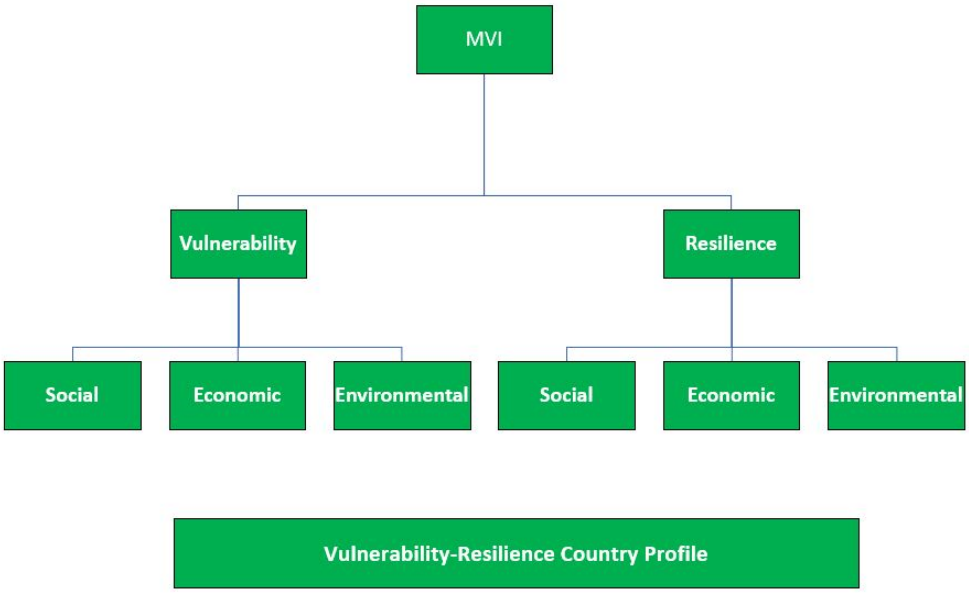
18. The proposed MVI aligns with the guiding principles detailed above, and incorporates an additional component, the VRCP. The VRCP involves the development of systematic and comprehensive national country profiles to complement the MVI assessment. The proposed structure consists of two levels as follows:

(i) **Universal Level Quantitative Assessment** of structural vulnerability and resilience using a common methodology for all developing countries, which is presented via a summary index number to rank countries and a dashboard showing individual countries scores on component parts; and

(ii) **National Vulnerability and Resilience Country Profiles (VRCP)** which are a more detailed, tailored, and individualized characterization of a country's vulnerability and resilience factors, including non-structural resilience. These national profiles, prepared by individual countries, can be used to direct support and cooperation toward addressing specific vulnerabilities identified and to enhancing resilience. In simple terms, a vulnerable country may prepare a VRCP as part of their national planning process, which would then be used to guide cooperation and assistance at the national level.

19. Figure 1 depicts the tiered structure of the MVI. The quantitative assessment level contains two main components: structural vulnerability and structural resilience. Each of these components encompasses economic, environmental, and social dimensions, which in turn consist of a range of indicators representing specific factors related to vulnerability and resilience. The VRCP level mirrors this framework, reflecting country-specific challenges, constraints, policies, and investments.

Figure 1: The MVI Framework



II. Key definitions underpinning the MVI

20. The following definitions underpin the proposed MVI.

a. Structural vulnerability

The risk of a country's sustainable development being hindered by recurrent, adverse, exogenous shocks and stressors.

21. Macro-level vulnerability is the risk of national development being adversely affected by exogenous shocks (slow or rapid onset), or stressors[7], including but not limited to environmental factors (for example, droughts, tropical cyclones), economic factors (for example, worsening

[7] Shock: Any externally generated event that has a large-scale unexpected impact on a country. Shocks may originate from economic, social or environmental sources and may have economic, social or environmental consequences. Shocks may be recurring (for example, commodity price variation, tropical cyclones), slow onset (for example, drought, 2008 financial crisis) or rapid onset (for example, the COVID-19 pandemic) in nature.

Stressor: Any factor whose influence serves to constrain, place pressure on or have a detrimental effect on a country, thereby limiting its sustainable development. Stressors are typically without defined time frames and may be of variable intensities, in that exposure could be intense but short lived (for example, influx of refugees), or a chronic exposure that does not rapidly change over time (for example, sea level rise, ecosystem degradation, desertification). Stressors may have economic, social or environmentalorigins and typically cause sustained damage overtime, necessitating significant costs to address.

terms of trade), or social factors (for example, epidemics). As acknowledged in the literature[8], the impact of an exogenous shock or stressor on an economy is contingent upon:

- the magnitude of the shock and whether it is a recurring shock or a progressive shock or stressor, such as climate change;
- the level of the country's exposure to these shocks and/or stressors; and
- the country's capacity to withstand, recover from, and absorb or minimize these shocks and/or stressors (resilience).

22. Structural vulnerability results from factors that are independent of current or recent policy choices. The underlying factors that determine structural vulnerability include the risk of exposure to exogenous shocks and stressors, and the extent of a country's exposure (in terms of historical persistence and intensity). Structural vulnerability indicators should be based on sustainable factors measured over significant periods of time.

b. Structural resilience and structural lack of resilience

The inherent characteristics or inherited capacity of countries to withstand, absorb, recover from or minimize the adverse effects of shocks or stressors.

23. Resilience is a country's ability and capacity to mitigate the impact of shocks or stressors, recover swiftly from them, and adapt flexibly in response to stressors. Resilience plays a crucial role in determining the magnitude of the impact of external shocks or stressors on a country. The capacity of a country to respond effectively, or its "resilience," is affected by structural factors such as human capital, infrastructure, and natural capital. These structural factors collectively contribute to a country's structural resilience.

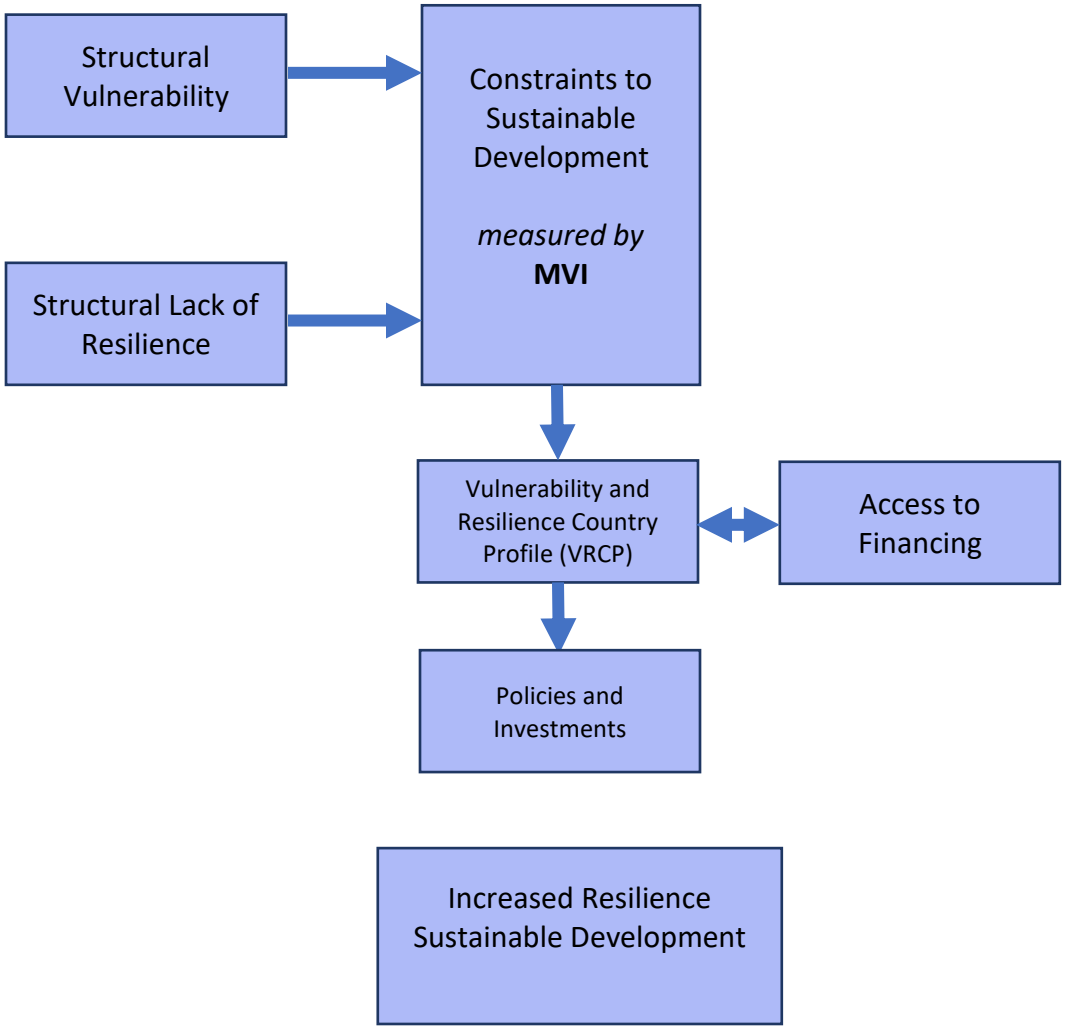
24. Public policies and programs can help both public and private entities to respond to a shock or stressor. However, these are non-structural factors. For example, a country vulnerable to economic shocks can implement policies and investments to diversify its economy. A country vulnerable to natural hazards can develop early warning systems and investments to limit damage to public and private assets. Accurate assessment of these factors requires detailed knowledge of the quality of country policies and their implementation. It is possible for two countries that possess equal levels of structural vulnerability and resilience to exhibit different capacities to withstand shocks or stressors, due to variations in their non-structural resilience.

25. **Figure 2** summarizes the causal logic of the MVI framework. Both structural vulnerability and lack of resilience constrain sustainable development. The level of exposure that a country faces in relation to shocks or stressors determines the potential impact of those shocks or stressors, while the structural resilience of a country interacts with its exposure to shocks or

[8] See UN-OHRLLS (2021) for a review as well as Adger (2006); Adger and Vincent (2005); Crichton (1999); Guillaumont (2009; 2010); and IPCC (2001).

stressors, ultimately determining the extent of the final impact of that shock or stressors on the country's development.

Figure 2: Theory of Change



26. While countries can, and should, implement policies and investments to counteract these factors, these interventions cost money. A low-income country will not likely have the resources to develop and implement the right policies and investments. Even a middle-income country may struggle to mobilize resources, especially for stressors, whose impacts are compounded over time. Vulnerable countries, whatever their income level, will face trade-offs between resilience building and financing other policies and investments needed to accelerate their sustainable development.

27. It is also important to note that resilience factors do not affect the likelihood of future shocks or stressors, but rather influence the expected impact of those shocks/ stressors on sustainable development. Countries lacking structural resilience are thus more vulnerable.

28. As depicted in Figure 2, countries have structural vulnerabilities and structural impediments to developing resilience, which occur in 3 domains (economic, environmental and social). Investments and suitable policies can be targeted towards building resilience, with a focus on policy-driven approaches.

III. The structural vulnerability components of the MVI

29. The structural vulnerability component of the index consists of the three primary sources of macro-vulnerability: economic, environmental, and social, which also correspond to distinct categories of shocks and stressors, primarily classified based on their origin (i.e., economic, environmental, and social) rather than their multidimensional impact (see Figure 3). This approach facilitates the avoidance of redundant components across the three dimensions, while at the same time acknowledging their potential interconnectedness.

30. The following definitions underpin the structural vulnerability pillar of the MVI:

Economic vulnerability - the risk of harm from exposure to adverse external economic shocks[9]. Exogenous shocks and related instabilities of economic variables have detrimental effects on the economic growth of developing countries, ultimately compromising sustainable development. There are both short term and long-term effects.

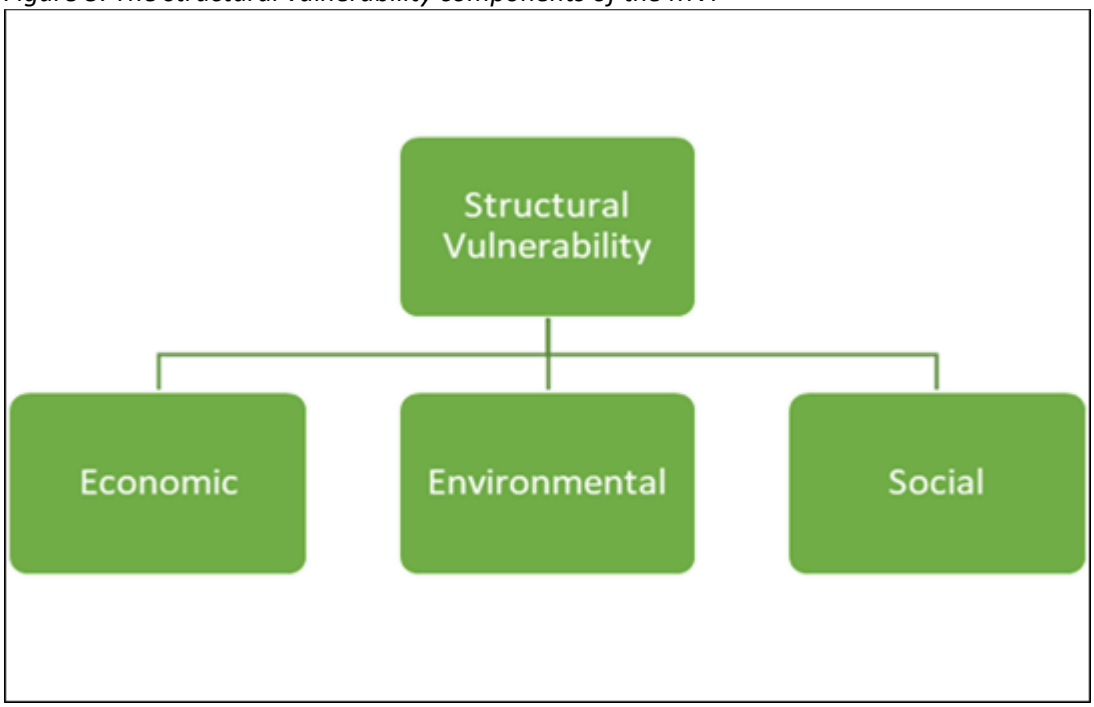
Environmental vulnerability - the risk of harm from exposure to natural hazards. Natural hazards may result from structural vulnerability to climate change and anthropogenic or socio natural shocks and stressors that are exogenous in origin[10]. The threat posed by climate change, as a distinctive form of vulnerability, constitutes a significant component of environmental vulnerability. It arises from the susceptibility to enduring alterations in geophysical conditions, rather than from a short- to medium-term growth impediment. Within this context, vulnerability to climate change refers to the susceptibility of a country to a specific global and progressive stressor that is likely to manifest through country-specific shocks and stressors.

Social vulnerability - the risk of harm from exposure to social shocks. Separating structural and nonstructural factors is more difficult, as social vulnerability is closely correlated with current policy[11]. In the last two decades, research has highlighted the

[9] UN-OHRLLS "Possible Development and Uses of Multi-Dimensional Vulnerability Indices: Analysis and Recommendations December 2021", p. 1.
[10] UN-OHRLLS "Possible Development and Uses of Multi-Dimensional Vulnerability Indices: Analysis and Recommendations December 2021", p. 2.
[11] UN-OHRLLS (2021), p. 3.

connections between external factors and domestic impacts such as violence, forced displacement and negative health impacts[12].

Figure 3: The structural vulnerability components of the MVI



IV. The structural resilience components of the MVI

31. The structural resilience component also comprises three categories of indicators: economic resilience, environmental resilience, and social resilience (see Figure 4). These categories represent the inherent and structural factors that contribute to mitigating the long-term impacts of external shocks and stressors, while also facilitating a more rapid transition out of vulnerability.

32. The following definitions underpin the structural resilience pillar of the MVI:

Structural economic resilience relates to the inherent economic capabilities and economic capital of a country. It encompasses factors that strengthen the economy's ability to withstand and recover from adverse events.

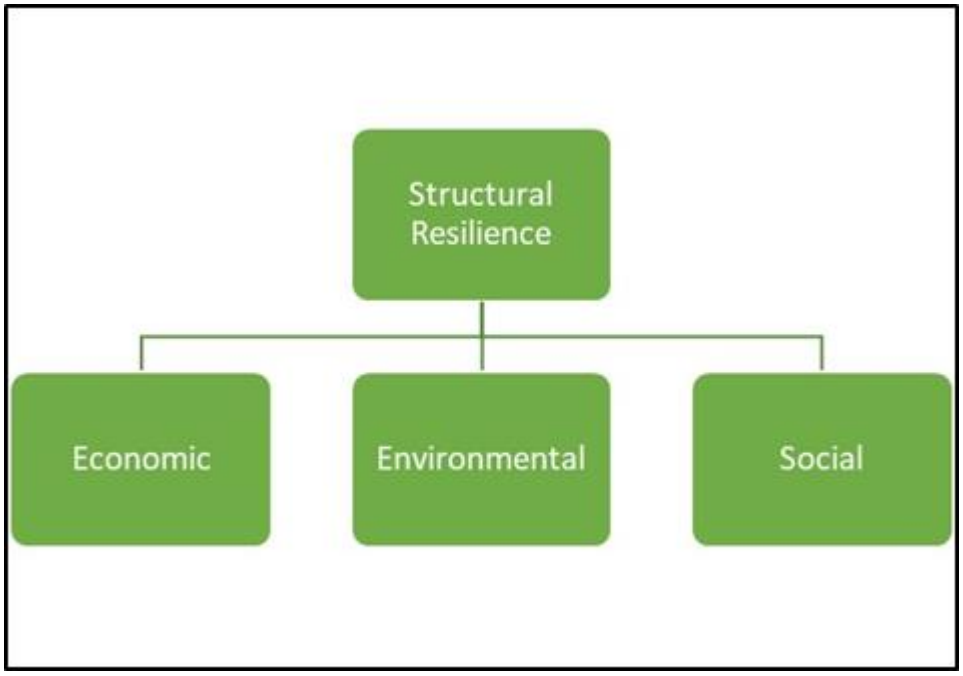
Structural environmental resilience focuses on the inherent environmental capital of a country. It pertains to the ecological resources, infrastructure, and systems that contribute to reducing vulnerability to environmental shocks and stressors.

[12] See Bankoff et al. (2004), Hilhorst (2013), Mena and Hilhorst (2021), Otto et al. (2017), Wisner (2012).

Structural social resilience encompasses the inherent social capabilities and social capital within a country. It involves factors such as social cohesion, social institutions, demographic structure and human capital that enhance the capacity to withstand and adapt to shocks and stressors.

33. It is important to note that in calculating the MVI, for technical reasons, the variable of interest is not the concept of "resilience" per se, but rather its opposite counterpart, referred to as "lack of resilience."

Figure 4: The structural resilience components of the MVI



34. In sum, the MVI presents a two-tiered framework: a universal quantitative assessment measuring structural factors of vulnerability (the index) and a country-led profile and narrative, detailing context-specific country structural and non-structural vulnerability and resilience factors. Both parts of the framework encompass three main domains of vulnerability, resilience, and sustainability: economic, environmental, and social. The index represents only structural factors, enabling it to be used as a tool to compare country need for resilience support, while the VRCP enables country-driven dialogue on the form and structure of such support.

CHAPTER 3 – BUILDING THE MVI: APPROACH & METHODOLOGY

I. Introduction

35. This chapter presents the technical structure of the MVI. It details how the Principles mentioned in Chapter 2 determined the technical choices governing the specific design of the MVI to operationalize the framework described in Chapter 2.

II. Layers: pillars, dimensions, concepts and indicators

36. As previously stated, the MVI is not a general index of lack of development, policy performance deficiencies or structural handicaps to growth. Rather, its objective is to measure the risk for developing countries being impacted by external (exogenous) shocks and stressors, translating a complex reality into a simple, computable index**.** In this regard, respecting the principles of multidimensionality and universality does not necessarily mean that every possible indicator of vulnerability must be introduced individually in the MVI. At the same time, the principle of simplicity implies that the MVI need not list and then aggregate an exhaustive list of indicators related to the vulnerability and resilience of developing countries. Choices therefore needed to be made.

37. To simplify index construction and indicator selection, bridging the gap between the broad definitions of the framework and the selection of specific indicators, the MVI defined each dimension through the use of ***concepts***. Each dimension of vulnerability and resilience is characterized by three concepts (18 in total). Each concept is measured through the selection of the fewest possible indicators, with each indicator acting as a proxy for their associated concept rather than representing a specific measure of vulnerability and resilience. The MVI is thus organized around four layers, which allows for a simpler and more balanced aggregation leading to a clearer and more easily understandable structure: The layers are as follows:

i. the concepts (aggregating related individual indicators);
ii. the dimensions (aggregating the concepts forming the particular dimensions of structural vulnerability or lack of structural resilience);
iii. the 2 pillars (formed by the aggregation of the 3 dimensions of structural vulnerability and lack of structural resilience respectively); and
iv. the MVI (formed by the aggregation of the structural vulnerability and lack of structural resilience pillar).

III. Selecting the indicators

38. To enable to selection of the best indicators, the Panel set criteria and rules to ensure the quality of the indicators that form the MVI, as follows:

- **Data quality**: In building this index, UN data was prioritized. In instances where relevant data was not found within the UN system, indicators were used that have been vetted by other UN entities or where strong evidence of the quality of the selected data existed. The use of external data was only considered when the source has been used by the UN for official proceedings.

- **Missing data**: In the case of missing data for a particular indicator, a threshold of 10% missing values was set (equivalent, approximately, to 15 missing data points out of a maximum of 142 data points). If this criterion was not satisfied, that particular indicator was excluded. Application of this criteria resulted in the exclusion of several potential indicators (see Annex 1). It was also decided that, following exhaustive attempts to select indicators with few or no missing values, if a country still had 3 or more missing indicators, the MVI score for the country would not be computed. While this principle serves as a fundamental guideline in the formulation of the MVI, it is worth noting that no developing country has been excluded. This is due to the concerted efforts undertaken by the panel during indicator selection. The list of developing countries for which the MVI is calculated is based on the "countries in developing regions" grouping of the M49 classification from UNSD.[13]

- **Transparency of the indicator selection process**: the choice of the vulnerability and resilience indicators was based on clear and detailed rationale, backed by solid evidence on causality or, at a minimum, association. The application of this criterion is discussed in Section 4 of this Chapter.

39. In identifying the indicators to be included in the MVI, the HLP explored a wide array of concepts and related indicators. **Annex 1** provides a summarized selection of indicators that were considered but ultimately not selected as part of the MVI due to data constraints, or lack of strong rationale or evidence.

IV. The MVI concepts and indicators

40. In accordance with the principles and rules presented above and following a thorough literature search, 18 concepts were identified to populate the vulnerability and resilience pillars of the index, measured by 26 indicators, as shown in Figure 5. A summarized rationale is provided below, as well as a link to the data source.

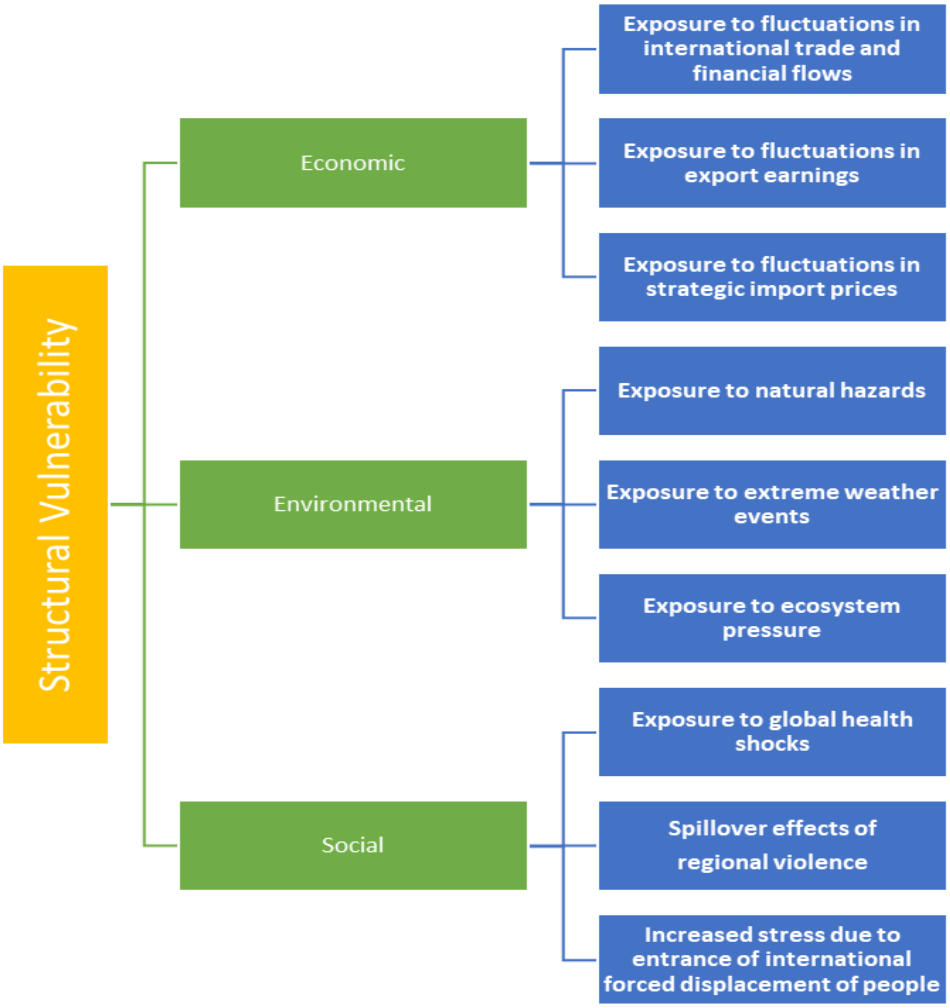
41. Indicators were computed by using averages over time to ensure that the indicator defines a vulnerability or resilience factor that is truly structural and not induced by current policy. Measuring factors over time ensures that they capture medium-term economic,

[13] https://unstats.un.org/unsd/methodology/m49/ .

environmental, or social vulnerability (or long-term physical vulnerability in the case of climate change and natural hazards). All level indicators are measured over a five-year average, with the exception of those that are subject to strong fluctuation (for example, Gross fixed capital formation as a percentage of GDP). Indicators measuring instability are measured over a 20-year period.

42. Following are the concepts and indicators relating to structural vulnerability

Figure 5: Structural vulnerability: Structure and concepts



Concept #1: Exposure to fluctuations in international trade and financial flows *- Countries with concentrated export structure are likely to suffer more harm when exposed to external shocks.*[14]

Indicator #1: Merchandise and services export concentration	The indicator measures whether a country's export revenue relies on a small number of products and services. The higher the level of concentration in a country's export of goods and services, the greater its susceptibility to fluctuations in export demands and global prices of merchandise and services, rendering it more vulnerable. The indicator is measured as the percentage of the three highest export categories in total exports of goods, and services (three services categories grouped under the headings of transport, travel, and other services). Data is retrieved from UNCTAD.

Concept #2: Exposure to fluctuations in export earnings *- Countries with unstable export earnings have a lower capacity to import goods, services, and capital, leading to higher investment risk and fiscal instability.*[15]

Indicator #2: Instability of export revenue	The indicator measures a country's vulnerability to fluctuations in export volume and prices caused by external economic shocks. Unstable export earnings have a large effect on private and public revenues and consumption and increase investment risk. The indicator is measured as the standard deviation of the difference between the value of annual export revenue and its 20-year trend. The estimated trend is mixed and includes both stochastic (a one-year lagged of export revenue) and quadratic deterministic (a time variable and its square) components. Data is retrieved from UNDESA Statistics Division

[14] See Edo et al. (2020); Lee and Zhang (2022); UNCTAD (2022).
[15] Arshed et al. (2022); Ghirmay et al. (1999); Ghosh & Ostry (1994); Guillaumont et al. (1999).

Concept #3: Exposure to fluctuations in strategic import prices - *Countries that import a high percentage of their food and fuel are more vulnerable to externally generated inflationary pressures.*[16]

Indicator #3: Food and fuel import dependency	This indicator measures a country's vulnerability to changes in imported food and fuel prices. Higher dependence combined with price increases or shortages causes inflation, erodes household purchasing power increasing poverty, and undermines macroeconomic stability. The indicator is measured as the 5-year average of the ratio of the sum of food and fuel imports over the final consumption expenditure. Data on food and fuel imports, as well as final consumption expenditure are available from UNCTAD. Food comprises the commodities in the Standard international Trade Classification (SITC) sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats) and SITC division 22 (oil seeds, oil nuts, and oil kernels). Fuels comprise the commodities in SITC section 3 (mineral fuels, lubricants, and related materials). Final consumption expenditure is the sum of household final consumption expenditure (private consumption) and general government final consumption expenditure (general government consumption). Data is available from UNCTAD.

Concept #4: Exposure to natural hazards - *Mortality, injury, displacement, or material loss from hazards have a significant impact on society in terms of loss of: life or health; economic, social, and cultural assets; and access to public services and infrastructure, markets, and work.*[17]

Indicator #4: Victims of natural hazards	This indicator reflects a country's human vulnerability to natural hazards which can seriously handicap a country's sustainable development. This indicator is calculated by dividing the annual number of victims of natural hazards by the total population of the country over 20 years and then taking the simple average. Victims of natural hazards are defined as people killed or affected (i.e. people requiring immediate food, water, shelter, sanitation, or medical assistance). It covers weather and climate-related hazards (such as floods, landslides,

[16] Baer-Nawrocka and Sadowski (2019); Wakeford and de Wit (2013); Wakeford et al. (2015).
[17] Alexander (2006); Raddatz (2009); Rasmussen (2004); Yoon (2012).

storms, droughts, and extreme temperatures) as well as geophysical hazards (such as earthquakes or volcanoes). The calculation requires the total population data from UNDP in its World Population Prospects database and data on people killed and affected by natural hazards from the Emergency Events Database (EM-DAT) of the WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED). Data is retrieved from EMDAT-CRED.

Indicator #5: Damages related to natural hazards

This indicator reflects a country's economic vulnerability to natural hazards. Natural hazards and climate-related hazards can damage infrastructure, like roads and bridges, as well as critical sectors of the national economy, such as agriculture causing negative effects on development, productivity, economic growth, and sources of income, particularly in rural areas. The high cost of reconstruction can inhibit investment needed for strengthening resilience and reduction of vulnerabilities, as well as for sustainable development more broadly.

This indicator measures the share of GDP lost due to natural hazards. It is calculated by dividing the annual cost of damages due to natural hazards by the GDP of the country over 20 years and then taking the simple average. The calculation requires the GDP data from UNCTAD and data on the cost of damages due to natural hazards from the Emergency Events Database (EM-DAT) of the WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED). Data is retrieved from EMDAT-CRED.

Concept #5: Exposure to extreme weather events – *extreme weather events can disrupt a country's sustainable development through several avenues. Such shocks can impact access to water and sanitation, health, food security, agricultural productivity, employment, household consumption, with indirect impacts on education, and forced migration.*[18]

Indicator #6: Rainfall Shocks	This indicator reflects a country's vulnerability to rainfall shocks. Rainfall shocks can have a severe impact on economic activity, access to water, food insecurity, and increase conflicts caused by resource scarcity. The indicator therefore represents risks from both flood and drought. The indicator is measured by combining both an exposure component (the average rainfall since 1950) and a shock component (the trend in rainfall shocks since 1950). The primary objective is to ascertain if the deviations from the long-term trend demonstrate an escalating magnitude or intensity, assuming that this pattern is influenced by climate change and is likely to amplify in the future. The dataset utilized for this analysis is obtained from version 4.06 of the Climatic Research Unit, renowned for its comprehensive collection of rainfall data (CRU TS -University of East Anglia).
Indicator #7: Temperature Shocks	This indicator reflects a country's vulnerability to temperature shocks. Temperature shocks negatively impact the long-run growth in the economy through their impact on labor and land productivity. Temperature shocks can also cause higher food prices contributing to food insecurity. The indicator is measured by combining both an exposure component (the average temperature since 1950) and a shock component (the trend in temperature shocks since 1950). The trend in temperature shocks is measured by the regression of temperature deviations from the trend on the time variable. The aim is to determine whether the deviations from the long-term trend are increasing in magnitude or intensity, assuming that this trend is driven by climate change and will tend to increase in the future. Temperature data come from the version 4.06 of the Climatic Research Unit (CRU TS -University of East Anglia).

[18] Calvo and Dercon (2013); Conway and Schipper (2011); Feindouno et al. (2020); IPCC (2014); Leichenko and Silva (2014).

Concept #6: Exposure to ecosystem pressure **-** *Countries with higher share of land exposed to pressures related to climate change are more at risk of disruption of their sustainable development.*[19]

Indicator #8: Low-elevated coastal zones (LECZs)	This indicator captures the vulnerability of low-elevated coastal zones to extreme events such as flooding and storms, which impose substantial costs on coastal countries. Low-elevated coastal zones (LECZs) are highly vulnerable to marine submersions and pressures on coastal ecosystems from climate change. Threats include increased exposure to sea-level rise, storm surges, ocean acidification, and habitat damage such as coral bleaching. Sea-level rise causes flooding, coastal erosion, and the loss of coastal habitats that naturally protect the coastline from storm surges. The loss of these habitats increases the number of people at risk. The faster the rate of climate change, the greater will be the risk of damage to LECZs. The indicator is measured as the share of low-elevated coastal zones in the country's total area. Low-elevated coastal zones are defined as areas contiguous to the cost below 5 meters. Data are collected from the version 2.1 of CoastalDEM (https://go.climatecentral.org/coastaldem/) for areas less than 60°N latitude and the version 3 of the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Global Digital Elevation Model (GDEM). (https://www.earthdata.nasa.gov/news/new-aster-gdem) for areas greater than 60°N latitude.
Indicator #9: Drylands	Drylands are under increased stress due to increased aridity caused by climate change, leading to vulnerability for the populations living in those areas. A high share of drylands in a country is a factor of structural vulnerability hindering its sustainable development, This indicator is measured as the part of land areas considered to be the arid, semiarid, and dry sub-humid zones (three of the world's six aridity zones), as a percent of the country's (non-desertic) total land area. Deserts, which are classified as hyper-arid areas, are excluded in both the dryland areas and the country's total land area. Arid, semiarid, and dry sub-humid areas are defined according to the UNEP definition as those

[19] IPCC (2014); Madden (2020); Mirzabaev et al. (2019); Nicholls et al. (2007); Olsson et al. (2019); Safriel et al. (2005).

having a ratio of annual precipitation to potential evapotranspiration between 0.05 and 0.65. For desert areas this ratio is less than 5 percent. Data on precipitation and potential evapotranspiration is collected from the version 4.06 of the Climatic Research Unit (CRU TS -University of East Anglia).

Concept #7: Exposure to global health shocks *- Epidemics can cause substantial disruption to economic and social systems. Countries who experience a series of epidemics over short interval of time are less likely to have time to recover and will be in a progressively weaker situation over time.*[20]

Indicator #10: Victims of Epidemics

This indicator measures a country's health and social system vulnerability to the spread and lethality of a certain virus, pandemic, or disease.

The indicator measures the average share of the population who are victims of epidemics. It is calculated by dividing the annual number of victims of epidemics by the total population of the country over 20 years. Epidemics include viral disease, bacterial disease, parasitic disease, fungal disease, and prion disease. The total population data is gathered from UNDP in its World Population Prospects database and victims of epidemics data is from the Emergency Events Database (EM-DAT) of the WHO Collaborating Centre for Research on the Epidemiology of Disasters (EMDAT-CRED).

Concept #8: Spillover effects of regional violence *- Violence in neighboring countries increases internal violence risk.*[21]

Indicator #11: Regional conflict-related death (excluding own country)

The indicator reflects a country's vulnerability to the presence of conflicts among its neighbors. Through the porous nature of borders and their spillover effects that can be felt across an entire region, conflicts can have significant negative impacts on the economic growth, macroeconomic stability, debt sustainability, and poverty reduction of countries.

This indicator measures the average number of deaths per 100,000 inhabitants due to conflict at the regional level, excluding internal conflicts specific to the country. The

[20] O'Sullivan and Bourgoin (2010) ; Rocha et al. (2021); Stanturf et al. (2015).
[21] Collier and Hoeffler (2004); Jasparro and Taylor (2008); Plotnikov (2020); Rettberg (2010).

regional level is defined by the direct neighboring countries if there are contiguous borders. The regional average is computed using a quadratic mean. On the other hand, in the case of small islands for which there are no contiguous borders, the region is defined according to the UN regional (or sub-regional) groupings to which the country belongs. The UNSD M49 standard 3-level regional classification is used instead of the broader UN SDG regions for increased precision. Data is collected from the Armed Conflict Location and Event Data Project (ACLED) and the total number of deaths is measured over a period of 10 years since the ACLED data was established incrementally. Data for African countries were entered into the database starting in 1997, while data for other country groups were entered into the database relatively later. Taking 10 years instead of 20 ensures that the number of deaths is measured over the same period for all countries. Data is retrieved from ACLED.

Indicator #12: Regional Homicide (excluding own country)

This indicator reflects the risk of violence from neighboring countries. Criminality, especially transnational crime, is an example of an external stress factor that exacerbates the risk of local violence.

The indicator measures the average homicide rate for 100,000 inhabitants over 10 years. The regional level is defined by the direct neighboring countries if there are contiguous borders. The regional average is computed using a quadratic mean. On the other hand, in the case of small islands for which there are no contiguous borders, the region is defined according to the UN regional (or sub-regional) groupings to which the country belongs. The UNSD M49 standard 3-level regional classification is used instead of the broader UN SDG regions for increased precision. Data is also acquired from UNODC, WHO, and the Institute for Health Metrics and Evaluation (IHME) Burden of Disease (UNODC / WHO / IHME Burden of Disease).

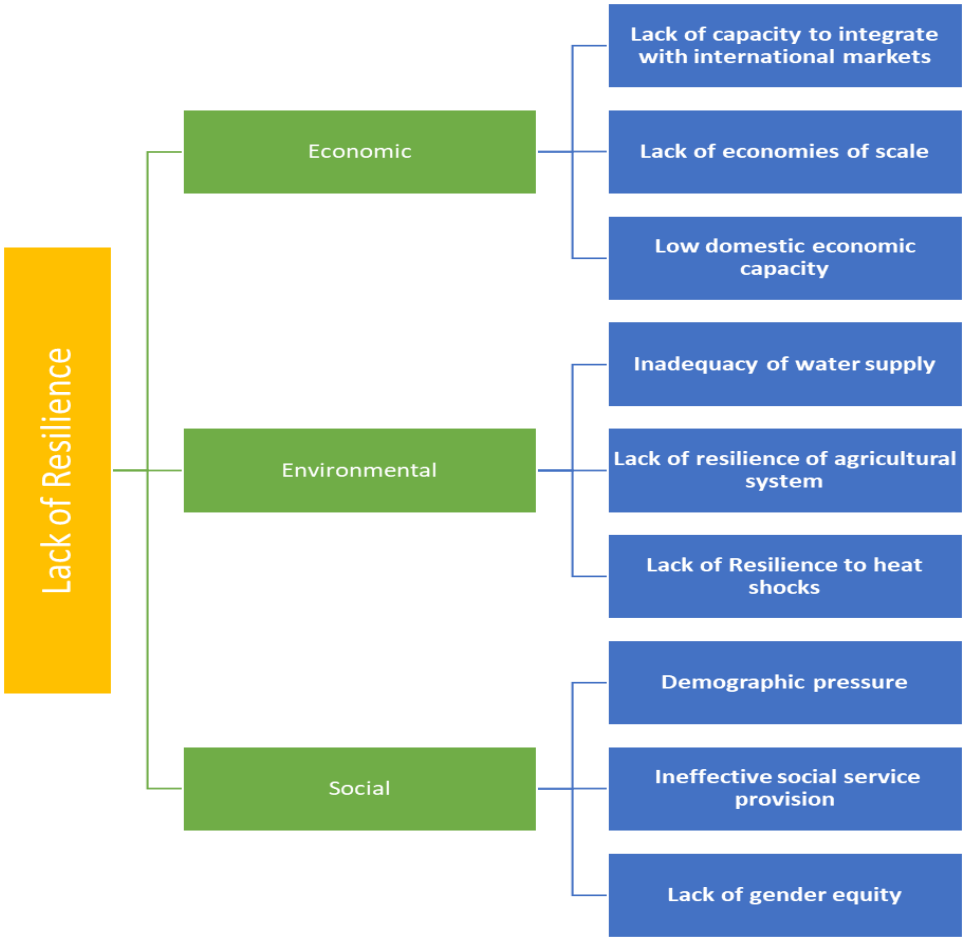
Concept #9: Exposure to entrance of international forced displacement of people *- Forcibly displaced persons reflect vulnerability between societal groups as well as the impact from other stresses – natural or other – on countries both within and between borders.*[22]

Indicator #13: Refugees from Abroad	This indicator reflects the fact that countries with a larger share of refugees suffer increasing social vulnerability not only in the refugee population but in the host country population as well. The presence of a refugee population increases the demand for social basic services, increases the supply in labor markets, affects the prices of commodities, and can stress environmental and natural resources all of which could jeopardize a country's sustainable development. The indicator measures the average share of refugees from abroad for 100,000 country's inhabitants. It is calculated by dividing the annual stock of refugees from abroad by the total population of the country over 10 years, multiplying this by 100,000, and then taking the simple average. Data is retrieved from UNHCR.

[22] Barman (2020); Whitaker (2002).

43. Following are the concepts and indicators relating to lack of structural resilience

Figure 6: Structural lack of resilience: Structure and concepts



Concept #10: Low capacity to integrate with international markets **-** *Remoteness increases transportation costs and creates information asymmetries which can reduce competitiveness, limit access to international financial markets, and constrain economic diversification, especially tourism development. Landlockedness can also increase trade costs due to the tariff, non-tariff, and infrastructure related trade barriers of neighboring countries that are outside of the control of the landlocked country.*[23]

Indicator #14: Low connectivity	This indicator measures a country's physical remoteness from international markets. It also reflects landlockedness, which increases average trade barriers or transport costs for a given distance. Remoteness is measured as the trade-weighted minimum average distance to reach 50% of the world markets. For each country i, partner countries j are ranked according to their distance from country i. The group of the closest countries is hence progressively selected until 50% of the World market is reached for country i (by the simple sum of partners' market shares). The trade-weighted average distance is then computed vis-à-vis this group of selected partners, using the distances between country i and selected partners j, and selected partners' market shares. To take into account the particular situation of landlocked countries, , an adjustment coefficient is applied (this coefficient is set at 15% applied to the distance calculated for the landlocked country). Data on bilateral distances between the capitals or major cities in the world, obtained from the Centre d'Etudes Prospectives et d'informations Internationales (CEPII) and world market shares based on exports and imports of goods and services reported annually by the United Nations Statistics Division in its National Accounts Main Aggregates database. Data is retrieved from CEPII / UNDESA Statistics Division.

[23] Carrere and Schiff (2005); Clark et al. (2004); Helble (2014); Wilmsmeier and Hoffmann (2008).

Concept #11: Lack of economies of scale *- Small countries have a small risk pool implying higher cost of shocks* and stressors *per capita (less diversification, low opportunity for risk pooling).*[24]

Indicator #15: Low population size	The smaller the country, the less resilient it is to economic, trade, and environmental shocks and stressors as all shocks become covariate. The small size of the population is an indicator of the small size of the domestic market, which is unfavorable to growth due to the lack of economies of scale. This indicator is measured by the 5-year average of the country's total population as of July. Data is retrieved from UNDESA Population Division, World Population Prospects.

Concept #12: Low domestic economic capacity *- Higher economic capacity through diversification and asset accumulation help reduce the total macroeconomic risk.*[25]

Indicator #16: Low gross fixed capital formation	This indicator indirectly reflects a country's low level of savings and weak asset accumulation. The lower the gross fixed capital formation, the less resilient the country is to shocks and stressors. This indicator measures the 10-year average of gross fixed capital formation over GDP. Data is retrieved from UNCTAD.
Indicator #17: Production concentration index	This indicator measures how diversified a country's economic output is across different sectors. A higher index means that the country's production is more concentrated in a few sectors, reducing resilience to external shocks. This indicator is computed using a Herfindahl-Hirschmann index applied to the value-added of each production sector to GDP. The following activities are considered: i) agriculture, hunting, forestry, fishing; ii) industry; iii) mining, manufacturing, utilities; iv) manufacturing; v) construction; vi) wholesale, retail trade, restaurants and hotels; vii) transport, storage, and communications; viii) other activities. This indicator is primarily lying between 0 and 1, a high level of

[24] Alesina et al. (2005); Bernal (2001); Damijan (2001).
[25] Ali (2015); Cordina (2004) ; Imbs and Wacziarg (2003); Kluge (2018).

concentration being associated with a score close to 1 (a country producing its total GDP from only one sector of activity would score 1 and less resilient). Data is retrieved from UNCTAD .

Concept #13: Inadequacy of water supply *- The availability of renewable internal freshwater supplies (internal river flows and groundwater from rainfall) improves a country's access to freshwater supplies after experiencing shocks. It also supports resilience of agricultural systems.*[26]

Indicator #18: Low renewable internal freshwater resources	Renewable internal freshwater resources such as internal river flows and groundwater are part of the natural capital of a country and constitute strategic reserves with important services. Countries with insufficient renewable internal freshwater resources per capita have less capacity to meet the water demands of their population, agriculture, and industry. They are also challenged in maintaining healthy ecosystems, during shocks and stressors such as droughts, floods, that limit water supply or affect its quality. The indicator is measured as an average over 5 years. Data is retrieved from FAO AQUASTAT.

Concept #14: Lack of resilience of the agricultural system *- Scarcity of arable land can delay recovery from shocks by impacting food security, agricultural productivity and output. Scarcity of arable land can also have long term impacts on land degradation and can cause civil conflicts among communities (for example, pastoralists and farmers).*[27]

Indicator #19: Lack of cropland	Cropland is an indirect measure of arable land. This indicator is measured by the average share of cropland over total population (in 1,000 hectares per capita) is over 5 years. Data is obtained from FAOSTAT.

[26] Dudgeon et al. (2006); Pradinaud et al. (2019).
[27] Griffiths et al. (2019); IPCC (2006); Zomer et al. (2017).

Concept #15: Lack of resilience to heat shocks - *Forests and trees contribute to increased water quality and quantity, reduce soil erosion, and provide shade to mitigate heat shocks. Trees and forests absorb and store carbon dioxide and support terrestrial biodiversity.*[28]

Indicator #20: Low tree cover	Forests supply water, provide livelihoods, mitigate climate change, and are essential for sustainable food production. Countries with lower amounts of forest area are more susceptible to exogenous environmental shocks and stressors, such as extreme weather events. The lack of forest means absence of this natural buffer between the extreme weather and population centers. This indicator is measured by annual tree-covered areas (in hectares) are divided by the area of the country and then the average over a period of 5-years is taken. Data is obtained from FAOSTAT.

Concept #16: Demographic pressure - *Demographic pressure generates higher need and costs of social services. It may also increase the risk of internal conflict when shocks hit.*[29]

Indicator #21: Dependency ratio	This indicator captures how demographic structure affects a country's adaptive capacity. The larger the dependency ratio is, the more substantial the economic and social burden carried by working-aged people, which inhibits recovery. A high dependency ratio indicates that the economically active population and the overall economy face a greater burden to support and provide the social services needed by children and by older persons who are often economically dependent. The indicator measures the average ratio of dependents (people younger than 15 or older than 64) to the working-age population (15-64) over 5 years. Data is retrieved from UNDESA Population Division.
Indicator #22: Population density	High population density increases the risk of injury or death when a natural hazard occurs. It also lowers country capacity to respond to health shocks because there is limited space for social distancing and greater demand for natural resources

[28] Bastin et al. (2019); Ickowitz et al. (2014); Reid and Huq (2005); Xia and McPherson (2002).
[29] Baulch and McCulloch (2002); Feng et al. (2020); Prashar et al. (2012); Vincent (2007).

(water supply). It may also reduce resilience to conflict when shocks hit.

The indicator measures the midyear population divided by land area in square kilometers. The population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The only exception is for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. Land area is a country's total area, excluding areas under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases, the definition of inland water bodies includes major rivers and lakes. The indicator is calculated by taking the simple average of population density over 5 years. Data is retrieved from UNDESA Population Division.

Concept #17: Ineffective social service provision *- Higher human capital allows for the development of better adaptation strategies to external shocks and stressors.*[30]

Indicator #23: Low number of people using at least basic sanitation services

This indicator reflects people's inadequate access to basic sanitation services. Poor access undermines human capital development and facilitates disease transmission, including during pandemics.

The percentage of people using at least basic sanitation services (improved sanitation facilities that are not shared with other households) is calculated as an average over 5 years. Data is retrieved from WHO.

Indicator #24: Under-5 mortality

This indicator provides information on the effectiveness of the health system in a country broadly, and particularly for young children. High mortality rates of children under 5 years of age are reflected in a deterioration in quality of life, reduced human development standards, and a poor human, social and cultural capital in populations, leading to a reduction in economic, social, and environmental resilience.

The indicator measures the probability per 1,000 that a newborn baby will die before reaching age five, if subject to

[30] Alimohamadi et al. (2019); Diep et al. (2021); Giné-Garriga et al. (2021); Hanushek and Woessmann (2012); Hendren and Sprung-Keyser (2020); Sherrieb et al. (2010).

age-specific mortality rates of the specified year. The indicator is calculated by taking the simple average of this probability over 5 years. Data is retrieved from UN Inter-agency Group for Child Mortality Estimation

Indicator #25: Low years of Schooling

This indicator reflects how low levels of education act as a constraint for economic growth and social cohesion and reduce individual and social prosperity. Less-educated populations are less able to act effectively when risks materialize, as well as develop adaptation strategies to external stressors. Moreover, educational attainment is a strong determinant of labor market outcomes in terms of access to employment, level of earnings, and individual labor productivity.

Years of schooling measures the average number of completed years of education of a country's population, excluding years spent repeating individual grades. Estimates produced by the UNESCO Institute for Statistics (UIS) cover the population aged 25 years and older, which is the indicator used in the calculation of UNDP's Human Development Index (HDI). Data is retrieved from UNDP.

Concept #18: Lack of gender equity *- Greater gender parity can contribute to economic growth through more effective use of the skills of the whole population, and when risks materialize, supports recovery and effective adaptation to long term stressors.*[31]

Indicator #26: Low proportion of seats held by women in national parliaments

This indicator captures the lack of gender equality in a society. Low gender parity can have a negative impact on economic growth through less effective use of the skills of the whole population, and when risks materialize, hinder recovery and effective adaptation to long-term stressors.

To minimize volatility, the proportion of seats held by women in national parliaments (as a percentage of the total number of seats) is measured as an average over a 10-year period. Data is retrieved from Inter-Parliamentary Union (IPU).

[31] Jha and Sarangi (2018); O'Reilly et al. (2015); Salamon (2023).

Box 1: Is the proportion of seats held by women in national parliaments an indicator of gender parity's contribution to resilience?

The question of how to measure the contribution of national gender equality to resilience has consistently emerged within the Panel's deliberations and engagements with various stakeholders. Recognizing established evidence on the importance of gender parity for economic growth, political stability, and protecting human rights, the Panel argued that gender parity should be included as a resilience indicator, positing that the greater the degree of gender parity within a society, the higher its capacity to withstand external and internal shocks[32]. At its outset, the concept was predominantly viewed through the lens of education, and the Gender Parity Index for completion rates in upper secondary education, as established by UNESCO, was selected as an initial indicator. However, due to extensive data gaps, the indicator was excluded. Specifically, 31 developing countries, constituting 21.8% of the total sample, lacked data points—surpassing the Panel's 10% threshold for admissible data absence.

Consequently, alternative indicators were proposed for consideration, including gender-based violence and women's land ownership. Acknowledging their significance, the Panel excluded them due to their insufficient data coverage. Nevertheless, the Panel noted that these indicators could find their place in future iterations of the MVI if their geographic scope improves, while ensuring the data gaps remain below the 10% tolerance threshold.

Ultimately, in consultation with UN Women, the proportion of seats held by women in national parliaments was chosen to capture gender parity. Although not deemed the most optimal indicator by the Panel, its comprehensive data availability for all developing countries was a significant advantage. The Panel also deliberated on the structural aspect of this indicator. In this context, it was highlighted that the indicator's broad coverage across developing nations and its substantial time series permit a measurement averaged over a decade. This approach mitigates the influence of current policies, rendering the indicator more exogenous and reflective of structural trends.

Box 2: Debt vulnerability, an ongoing issue in MVI debates

Following the external shocks of the global COVID-19 pandemic and the subsequent economic shutdown, an increasing number of developing countries have found themselves with unsustainable levels of foreign and/or domestic debt. This situation has been compounded by the effects of climate change, which have led to previously unforeseen exposures and negative events especially for SIDS. High levels of foreign debt can increase vulnerability and reduce economic resilience[33]. The Panel recognizes the importance of this issue and gave careful consideration to inclusion of debt indicators in the MVI. Ultimately, the Panel concluded that challenges related to data quality and availability could not be overcome.

[32] Empirical evidence supports this position in the literature. Garikipati and Kambhampati (2021) show that COVID-19 outcomes, particularly deaths, were better in countries led by women. Salamon (2023) shows that increased participation of women in governance has a positive impact on a wide range of social and environmental issues, including sexual and reproductive health and rights, gender-based violence, as well as a number of sustainable development and environmental outcomes, such as combating the effects of climate change and natural disasters. Other studies (Morchain et al., 2015; Opondo et al., 2016; Smyth and Sweetman, 2015) also highlight the importance of gender equality in building community resilience and sustainable development.

[33] See for example, the Inter-Agency Task Force (IATF) on Financing for Development 2022 report. Available at https://financing.desa.un.org/sites/default/files/2023-04/FSDR_2022. pdf

The first challenge was to identify an indicator that is purely exogenous nature e.g. debt resulting from external shocks, as distinct from debt caused by non-exogenous factors, as only the former could be considered for the MVI, given its focus on structural vulnerability. The Panel reviewed a set of broad debt indicators compiled by the UN and other sources, such as total government debt. However most of these indicators cannot be considered as sufficiently structural. Indeed, the amounts of total sovereign (public guaranteed) debt, the ratio of foreign and domestic sources, and the conditions, are all policy choices. Similarly, while it is understood that debt needed for development becomes a constraint to development in the face of an external or internal shock, this is also a broader development problem, and not a specific exogenous (structural) vulnerability.

The only specific exogenous vulnerability for developing countries would be the interest rate on external debt, which is out of the control of a country. This variable can change rapidly when a financial shock occurs in developed countries and is transmitted to developing countries, so it would be an appropriate proxy for country vulnerability to external financial shocks.

However, in pursuing available data on this indicator, the Panel found serious issues of data quality. Debt surveillance today depends on a patchwork of databases with different standards and definitions and different degrees of reliability, put together by various organizations. As a result, data on the external debt of developing countries is plagued with accuracy issues ranging from incompatible definitions, heterogenous data disclosure, measurement errors, hidden debt, volatility, and overall missing information notably for SIDS. In most cases, statistics focus on central government direct debt only, and omits subnational debt (required to reach general government level) and/or State Owned Enterprises (SOE) debt. These limitations to debt data in developing countries, and particularly in SIDS, are highlighted in various papers including Cruces and Trebesch (2013), Kemp-Benedict et al. (2018), Robinson (2014), Trebesch and Zabel (2017). Several actors are making efforts to improve debt transparency, but the battle is not yet won. Debt transparency is still a key commitment of the international community under the Addis Ababa Action Agenda for Financing for Development to meet the Sustainable Development Goals.

Numerous Member States have expressed concerns regarding that exclusion of debt from the MVI. The Panel, recognizing the importance of the debt issue, strongly recommends that the future depositary body of the MVI revisits this issue in subsequent revisions of the index, with the hope that the challenges related to the availability and quality of debt data can be resolved. In the meantime, the Panel suggests using the Vulnerability and Resilience Country Profiles, a complementary element of the MVI, to highlight the case of debt vulnerability for countries that wish to do so.

V. Calculation of the MVI scores

44. Once the indicators populating the concepts and dimensions of vulnerability and resilience were selected, the next step was to combine all this information into one single metric of vulnerability. This required addressing procedures associated with the construction of a composite index, including rescaling, aggregation, and weighting. Although there are no universally acceptable standards relating to the aggregation procedures, the Panel took great care to ensure that the selected methodology was reliable and built on a sound theoretical/conceptual framework.

a) Rescaling

45. Transforming the multiple units of the raw variables into a common and comparable scale is the first step in indicator aggregation, as the selected indicators had different units of measurement. For this purpose, rescaling of the individual variables was necessary. While various rescaling methods exist in the literature, the min-max technique is by far the most widely used method, especially for indicators aimed at providing international comparisons, for example, the HDI.[34] It is also used by most of the organizations that have produced existing vulnerability indices, for example, UN-Committee for Development Policy's Economic and Environmental Vulnerability Indicators (EVI).

46. The min-max technique consists of identifying the minimum and maximum value in each indicator. The minimum value is then transformed into a 0, and the maximum value into a 1, with every other value in between transformed into a positive fraction with a value depending on the distance from the minimum and maximum values. All vulnerability indicators must have a positive polarity with structural vulnerability, so that an increase in each rescaled indicator corresponds to an increase in vulnerability[35]. All values were then multiplied by 100 to facilitate aggregation.

b) Detecting and removing the influence of outliers

47. The method adopted by the Panel to reduce the impact of extreme outliers on the distribution of index values is based on the analysis of the distribution of indicators through quartiles and interquartile ranges. The outliers are thus the values located beyond the lower and upper bounds. The procedure is as follows:

i. Rank the raw data from lowest to highest value;
ii. Use the minimum and maximum values of the raw series as bounds for a first rescaling;
iii. Identify the observations and values corresponding to the first and last quartile;
iv. Calculate the interquartile range (IQR);

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[34] See Nardo et al. (2008).

[35] For each indicator of vulnerability, the following formula is used:

$$Rescaled\ vulnerability\ indicator = \frac{Vulnerability\ indicator - minimum}{maximum - minimum} \times 100$$

Similarly, all indicators of structural resilience should have a positive polarity with the lack of structural resilience. To this end, the following formula is used:

$$Rescaled\ lack\ of\ resilience\ indicator = 100 - \left(\frac{Resilience\ indicator - minimum}{maximum - minimum} \times 100\right)$$

v. From that, the upper bound is set as follows: Upper bound = Q3 + 1.5 IQR and the lower bound is set as follows: Lower bound = Q1 - 1.5 IQR.

48. Observations below the lower bound or above the upper bound are considered as outliers. Extreme values are then replaced by zeroes or ones depending on their initial position on the distribution[36].

c) Aggregation

49. The final MVI score for a given country, is an average of the country's scores on the individual indicators, concepts, dimensions and pillars. Once rescaling and outlier detection was complete, the Panel had to decide how this average (mean) should be computed, i.e how the indicators should be aggregated. The Panel sought to balance the criterion of simplicity with evidence on the complex reality of vulnerability. Importantly, countries differ in their vulnerability across the three dimensions of the MVI, a fact that any aggregation method should reflect.

50. Most indices use linear aggregation methods based on the simple arithmetic mean of equally weighted components. This type of aggregation is easily understandable as it is computed by summing a set of observations and dividing the result by the number of observations. Importantly, this method assumes perfect substitutability between all components: a poor score in one component can be compensated by sufficiently high scores in other components. The Panel decided that the evidence is clear that this assumption does not hold in the case of vulnerability, as, for example, low social vulnerability does not correct for high vulnerability to natural hazards. The Panel therefore rejected the use of this method.

51. Other indices use a geometric mean, for example, the HDI[37]. This involves multiplying a set of observations together taking the root of the product. This method does not assume substitutability. However, geometric aggregation is only possible for strictly positive data, which is a clear limitation considering that the chosen rescaling methodology (min-max), generates a value of 0 for the minimum. The panel decided that this method would therefore also not be appropriate.

52. The aggregation method, chosen by the Panel of the MVI, is the quadratic mean or the "root mean square" (RMS), as it was felt that this method allows for a good balance between simplicity and the need to highlight heterogeneous vulnerability profiles. The quadratic mean, used for each layer of aggregation, is computed in three steps: (i) each indicator is squared (to amplify the extremes); (ii) the arithmetic mean of the squared values is calculated; (iii) the

[36] The bounds should be kept constant across time in order to make future MVI results comparable with the ones presented in this report.

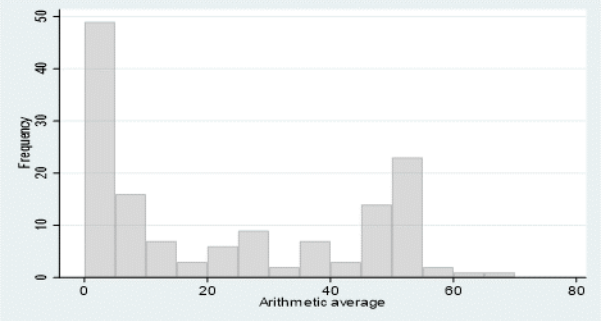
[37] https://www.undp.org/sites/g/files/zskgke326/files/migration/tr/UNDP-TR-EN-HDR-2019-FAQS-HDI.pdf

square root of the result obtained in step 2 is calculated [38]. This method does not assume substitutability, although in the unlikely case where all observations are equal to the mean, the result will be the same as the arithmetic mean. It should be noted that the difference between the arithmetic and the quadratic means diminishes as the number of observations increases.

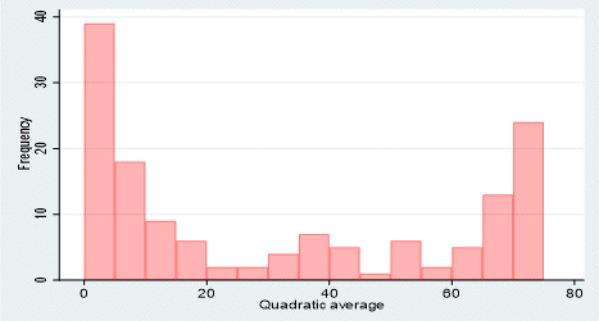
53. The example below demonstrates the benefits of using the quadratic mean for aggregation. Figure 7 presents two possible methods of aggregating indicators of exposure to ecosystem pressure: drylands and low-elevated coastal zones. The quadratic mean has the advantage of better dealing with heterogeneous profiles by prioritizing the largest values of individual indicators (or difference between rescaled components) instead of more homogenous profiles with fewer differences between indicators. The two indicators have a very low correlation. Countries are either highly exposed to one or the other but never to both. Using a simple mean would blur their specific profiles. The quadratic mean (in orange, on the right) results in high vulnerability scores for countries with just one of the two types of vulnerabilities, compared to the arithmetic mean (in gray, on the left).

Figure 7: arithmetic vs. quadratic aggregation - drylands and low-elevated coastal zones (LECZs)

a) Distribution of scores using the arithmetic mean



b) Distribution of scores using the quadratic mean



d) Weighting

54. Several weighting techniques exist and have been used in the development of various international metrics.[39] However, for simplicity's sake and in the absence of clear theoretical

[38] $MVI_q = \sqrt{\frac{1}{n}\sum_{i=1}^{n} V_i^2}$

The formula for this approach is shown here, where n represents the number of indicators, concepts, dimensions, pillars to be aggregated), and V denotes their values..

[39] Some weighting methods are objective, others subjective, based on expert judgement. For a review of these methods, see Booysen (2002), Esty et al. (2005), Manziotta and Pareto (2013), Munda and Nardo (2003), Nardo et al. (2008).

justifications, equal weights are most often applied, meaning that the components of the index are given equal importance. This equal-weights approach was also applied in constructing the MVI, at every layer.

CHAPTER 4 – THE RESULTS

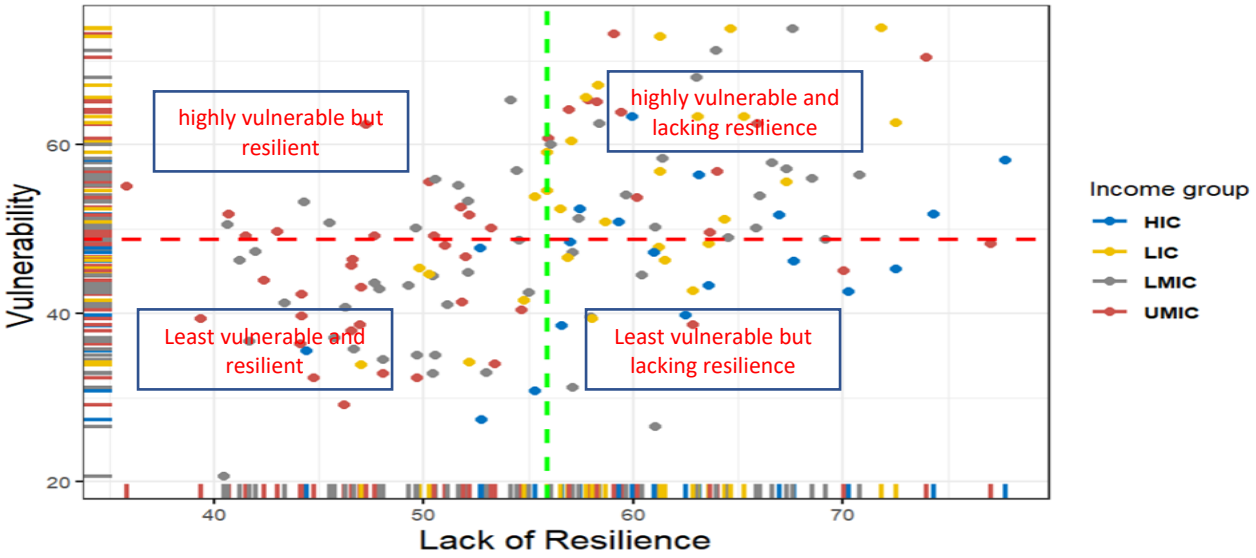
I. Validity of the Index

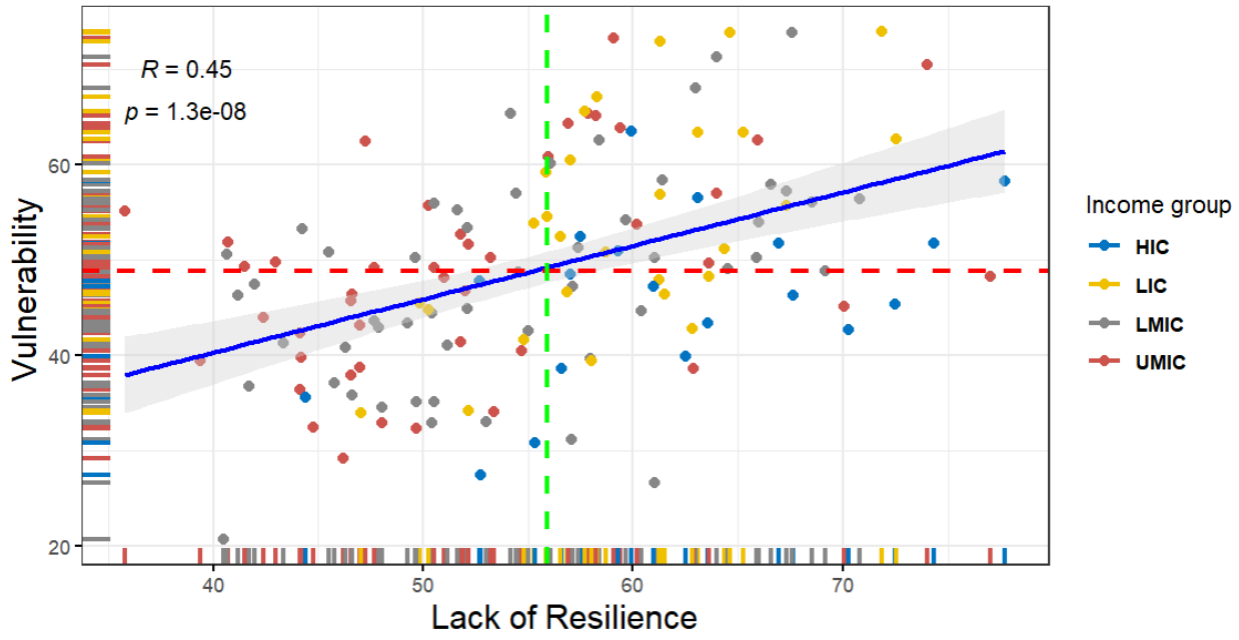
55. The relevance of any index depends on its intended use. Once the MVI has been constructed, establishing its validity becomes imperative. Several criteria were considered in assessing the index's validity as follows:

- Does the MVI generate a categorization of countries that is useful in terms of the pillars and dimensions, given country characteristics?
- does the MVI have the capacity to effectively represent structural vulnerability, and by extension indicate where resources could be allocated to support vulnerable countries? The MVI is not meant to replace useful metrics such as GNI pc, but rather as a complementary metric, providing deeper insights into a country's developmental needs, including it's financing requirements. In pursuit of this objective, any correlation with GNI per capita should be avoided to prevent redundancy.
- Thirdly, given that the MVI was originally proposed by the SIDS, the index should not discriminate against countries based on population size.

56. Results for these validity analyses are presented below in Figure 8.

Figure 8: Scatter plot of scores on vulnerability and lack of resilience

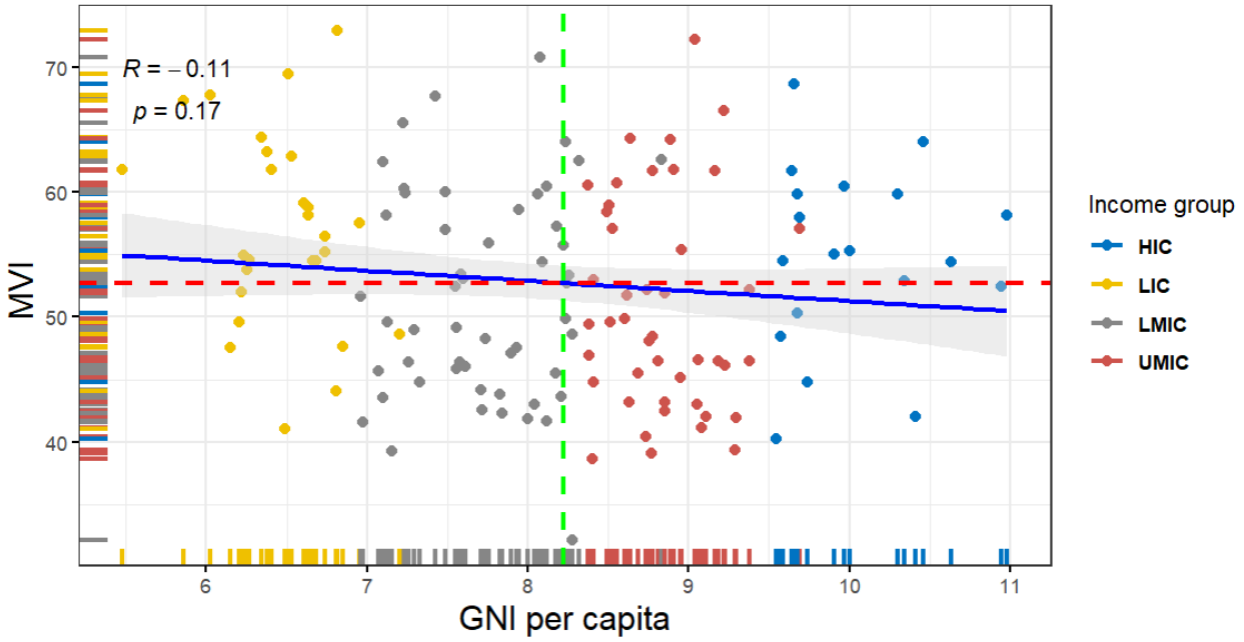




Dashed lines indicate medians for each axis.

57. The scatter plots illustrate the relationship between the vulnerability and lack of resilience scores. Each quadrant in the first graph is labeled according to the magnitude of these two variables in relation to its median. The presence of distinct income groups within different quadrants suggests a weak correlation between income level and both vulnerability and lack of resilience. This is further confirmed in Figure 9 below, where there is almost no association between income and MVI scores. The second scatter plot in Figure 8 also shows a positive relationship (correlation) between vulnerability and lack of resilience. Countries scoring high on structural vulnerability also score high on lack of structural resilience. This is especially true for low income countries (LICS), as all LICs with vulnerability scores surpassing the median value also exhibit lack of resilience scores above the median. Countries in the upper right-hand quadrant, regardless of their income status, face serious constraints to development because of their vulnerability.

Figure 9: Scatter Plot MVI / GNIpc (USD, in logarithm)[40]



Dashed lines indicate medians for each axis.

II. Relationship of MVI with country characteristics

58. Table 1 below presents the MVI results classified by different country groups. Focusing on the first row, the results for all countries indicate a minimal difference between the mean and the median, which suggests that the aggregation procedures described in Chapter 3 have resulted in a well-distributed MVI, despite the inclusion of a considerable number of indicators and the presence of skewness in several variables. The MVI results by country characteristics show that, on average, LDCs, LLDCs and SIDS are the most vulnerable groups, although the differences between the means of these groups are small (less than ½ of the standard deviation of the population mean).

59. Table 2 unpacks Table 1 to show how countries with above average scores are distributed by group. The bottom row of Table 2(a) shows that 63% of all LDCs have above the median MVI score, while 70% of all SIDS have scores above the median, indicating that these groups are more likely to be found in the upper levels of the MVI. The first column in Table 2(a) shows that the LDCs that have scores above the median have disproportionately higher scores, as 18% are in the top decile of the whole distribution, and 30% are in the top quintile. SIDS also show disproportionately high scores, with 13.5% in the top decile and 27% in the top quintile. Although MVI scores are not correlated with income, LICs are more likely to be found in the top decile as shown in Table 2(b). HICs are also more likely to be found in the upper ranges of the MVI scores,

[40] Log of GNI pc is used to narrow the spread of data on the horizontal axis, rendering the diagram easier to interpret.

although not to the extent that LICs, LDCs, or SIDS are; most of the HICs are found in the third and especially the fourth decile. Importantly, almost half of HICs with scores above the median are SIDS. This underscores the importance of measuring and addressing vulnerability even within developing countries with a relatively high national income as such income remains consistently at risk.

Table 1: Summary statistics by groups

Groups (number of countries in parenthesis)	**MVI Average by group**	**MVI median by group**	**MVI SD by group**
All developing countries	52.9	52.8	8.4
LICs (31)	56.9	55.8	7.7
LMICs (44)	51.5	49.8	8.3
UMICs (48)	50.8	48.9	8.5
HICs (19)	54.8	55.0	7.4
LDCs (46)	55.63	54.91	8.55
LLDCs (30)	53.36	52.86	7.60
SIDS (37)	56.63	57.04	6.91

Table 2: Cumulative distribution of the MVI across specific groups

a) country groups

	Groups		
	LDCs *(46)*	**SIDS *(37)***	**LLDCs *(30)***
Top 10%	*19.6%*	*13.5%*	*13.3%*
Top 20%	*30.4%*	*27.0%*	*20.0%*
Top 30%	*41.3%*	*43.2%*	*26.7%*
Top 40%	*47.8%*	*59.5%*	*36.7%*
Top 50% (median)	*63.0%*	*70.3%*	*50.0%*

b) income groups

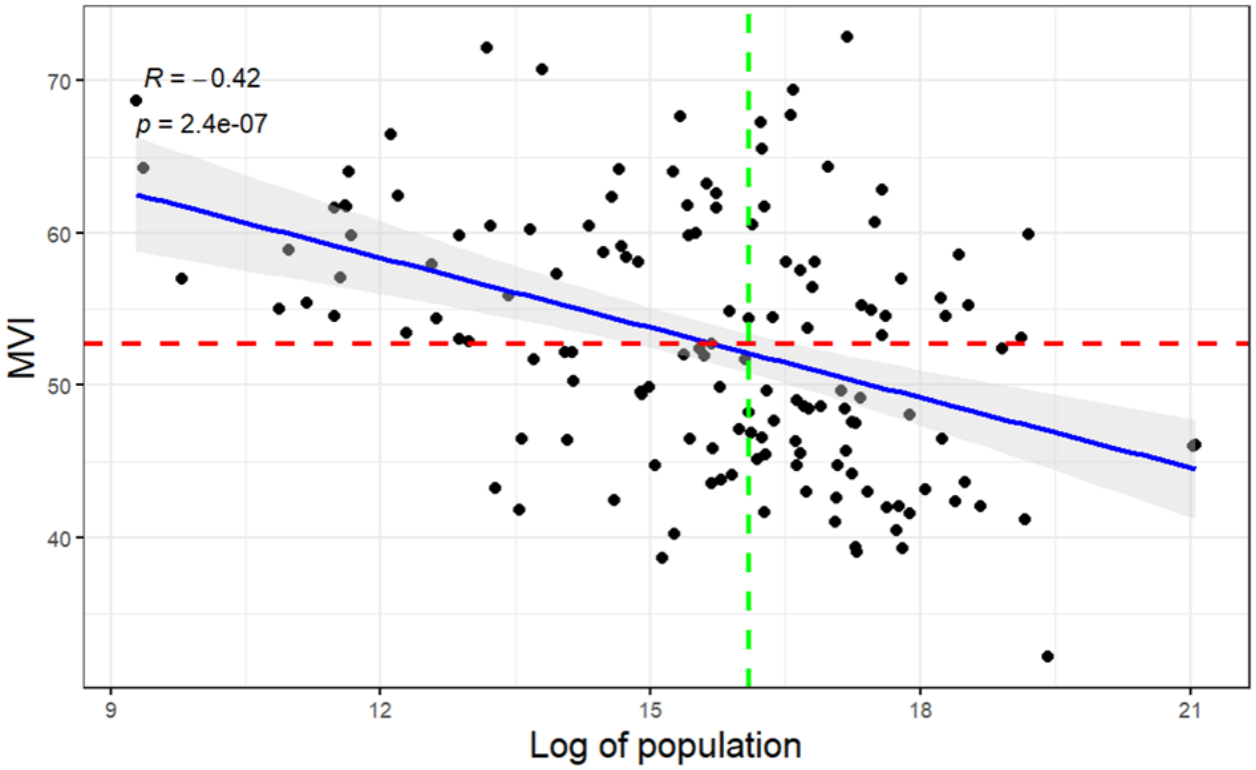
	Income groups			
	LICs (28)	**LMICs (52)**	**UMICs (44)**	**HICs (18)**
Top 10%	*17.9%*	*5.8%*	*9.1%*	*11.1%*
Top 20%	*32.1%*	*13.5%*	*20.4%*	*16.7%*
Top 30%	*42.9%*	*26.9%*	*25.0%*	*33.3%*
Top 40%	*53.6%*	*34.6%*	*31.8%*	*55.6%*
Top 50% (median)	*75.0%*	*42.3%*	*34.1%*	*72.2%*

III. Relationship of MVI with population

60. Figure 10 shows the association between the MVI and the logarithm of population size. The fitted line reveals a negative correlation between the MVI and population size, indicating that smaller countries generally exhibit higher vulnerability compared to larger ones. The observed relationship between the MVI and population size aligns with the usual findings in the existing literature on vulnerability[41], thereby validating the rationale behind providing the special treatment often given to small states in allocating concessional finance.

[41] See Alesina et al. (2005), Briguglio (2014), Coale and Hoover (2015), Milner and Weyman-Jones (2003), van der Velde et al. (2007).

Figure 10: Scatter Plot MVI / Population (log)[42]



Dashed lines indicate medians for each axis.

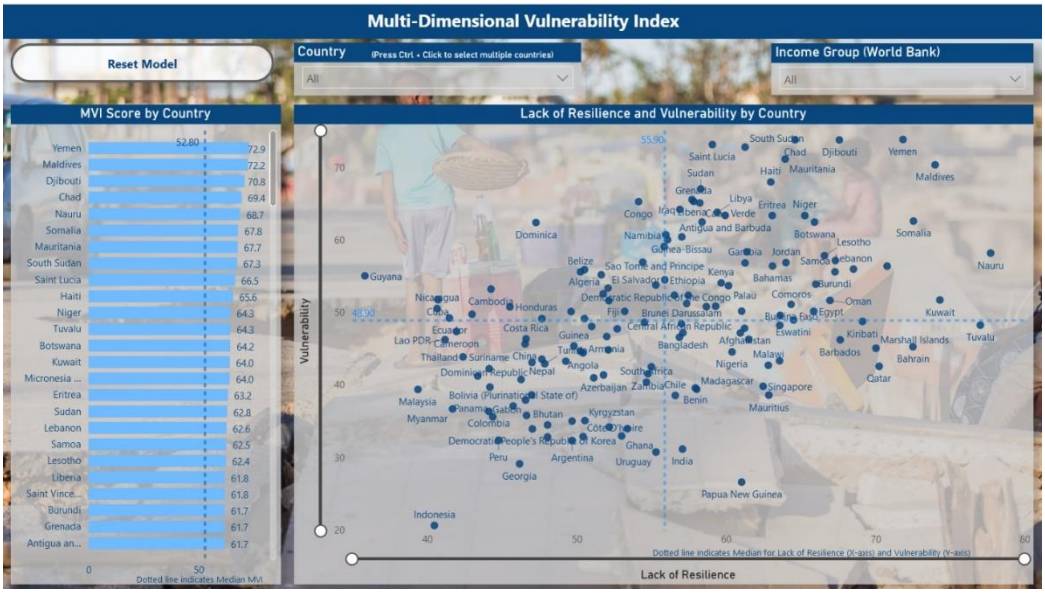
VI. MVI data visualization

61. The MVI data visualization tool was designed to enhance understanding of the MVI data, support data exploration and analysis, aid decision-making, and facilitate effective communication of the results. The tool is divided into pages, allowing users to interact with the data, manipulate variables, and observe the impact on the visual representation in real-time.

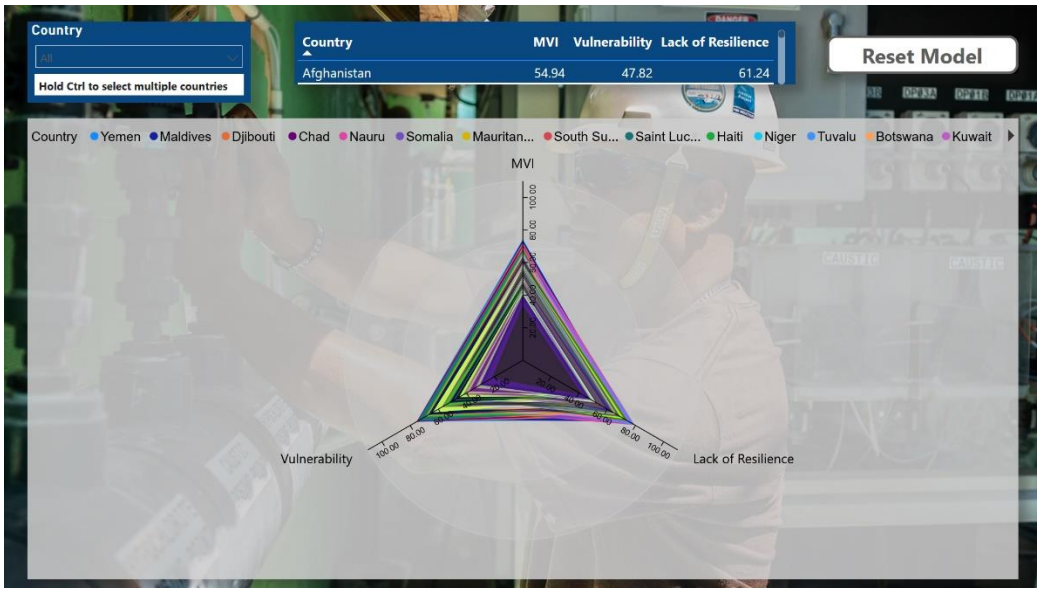
62. The main landing page (**Page 1: Multi-Dimensional Vulnerability Index**) displays a bar chart showing MVI scores by country, alongside a scatter plot that charts country-by-country scores for Lack of Resilience (X-axis) and Vulnerability (Y-axis). The bar chart displays by default MVI scores sorted by country from highest (most vulnerable) to lowest (least vulnerable). The scatter plot allows a visualization of the relationship between Vulnerability and Lack of Resilience, as well as the distribution of data points between these two variables. This tool can enable data-driven decision making. For instance, in the top right-hand quadrant of the scatter plot are countries with both high vulnerability and low resilience. Countries in the lower left-hand quadrant are countries with lower vulnerability and more resilience.

[42] Log of population is used to narrow the spread of data on the horizontal axis, rendering the diagram easier to interpret.

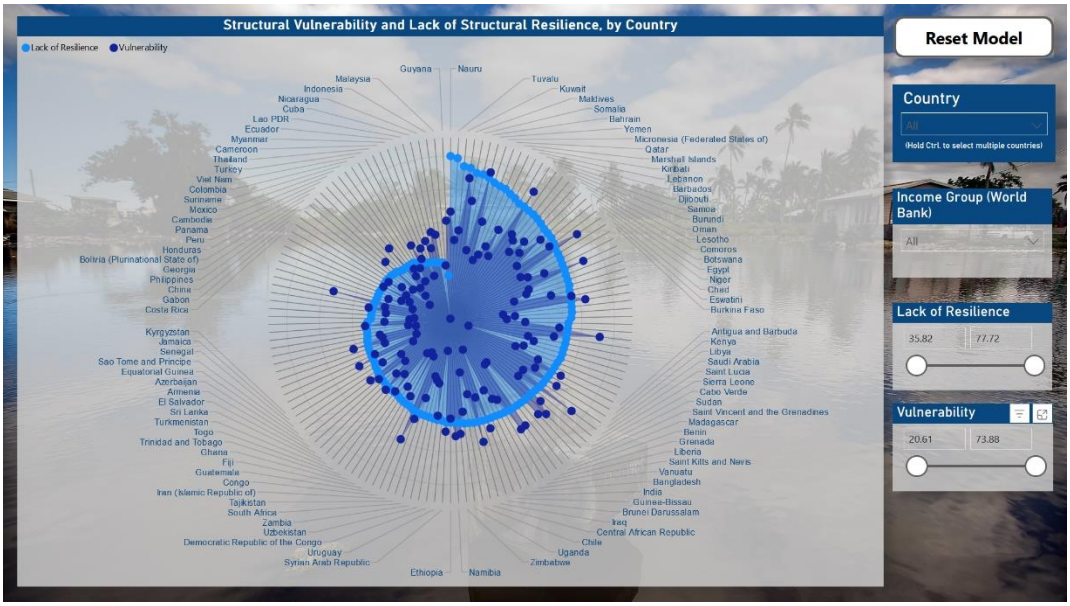
63. The scatter plot includes “zoom sliders” that enable users to examine a smaller range of data, for instance to zoom into the area of the chart where countries with the highest vulnerability and lack of resilience scores are located. Drop-down menus allow for the isolation of individual countries, groups of countries or income group.



64. Page 2: Individual MVI Scores by Country provides a visualization to easily view the relationship between three variables: MVI score, structural vulnerability and lack of structural resilience. The visualization is particularly useful to quickly identify whether a country has higher structural vulnerability versus lack of structural resilience, or vice versa.

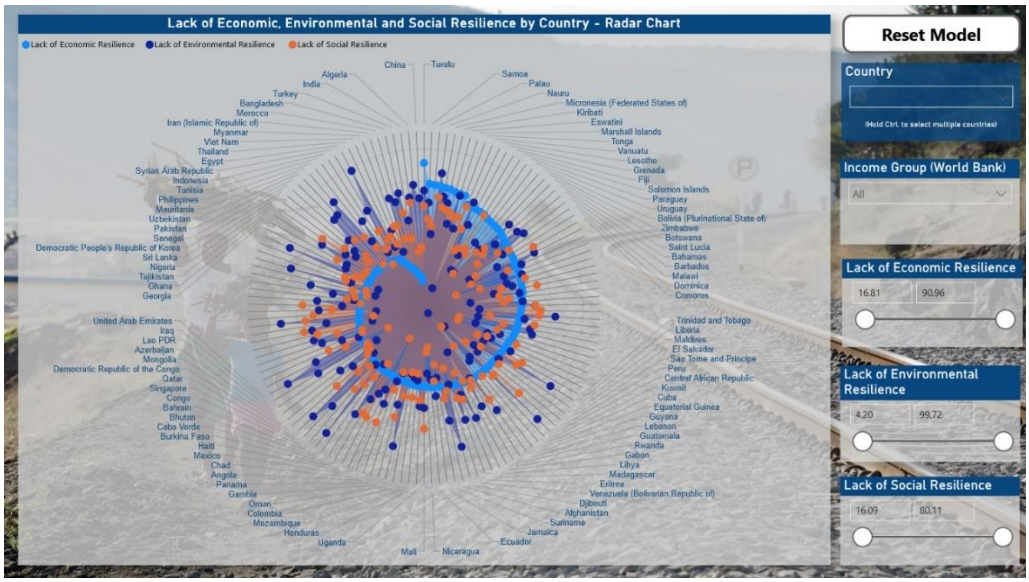


65. **Page 3: Structural Vulnerability and Lack of Structural Resilience by Country** enables an alternative visualization of the relationship between structural vulnerability and lack of structural resilience. The radar chart allows for ease of identifying countries with higher lack of structural resilience compared to structural vulnerability such as Nauru, and vice-versa, countries with higher structural vulnerability compared to lack of structural resilience such as Dominica.

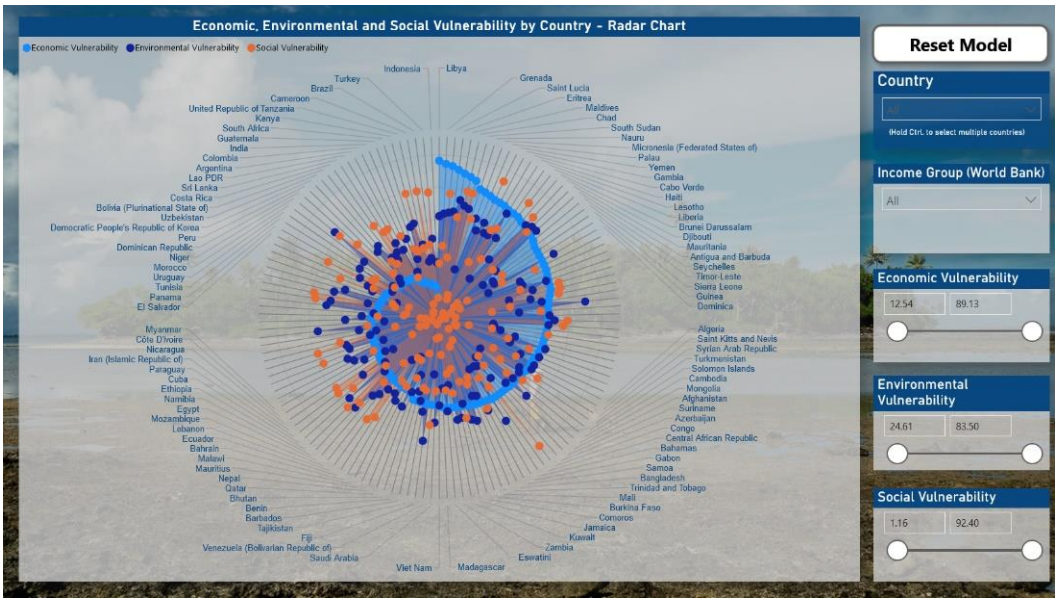


66. **Page 4: Lack of Economic, Environmental and Social Resilience by Country** - **Radar Chart** plots the three dimensions of structural resilience: economic resilience, environmental resilience, and social resilience. The radar chart provides the ability to visualize the relationship between the three dimensions where in some cases, such as Tuvalu, economic resilience is weaker than social resilience, while in other cases, environmental resilience is less than economic resilience, such as in the case of Kuwait.

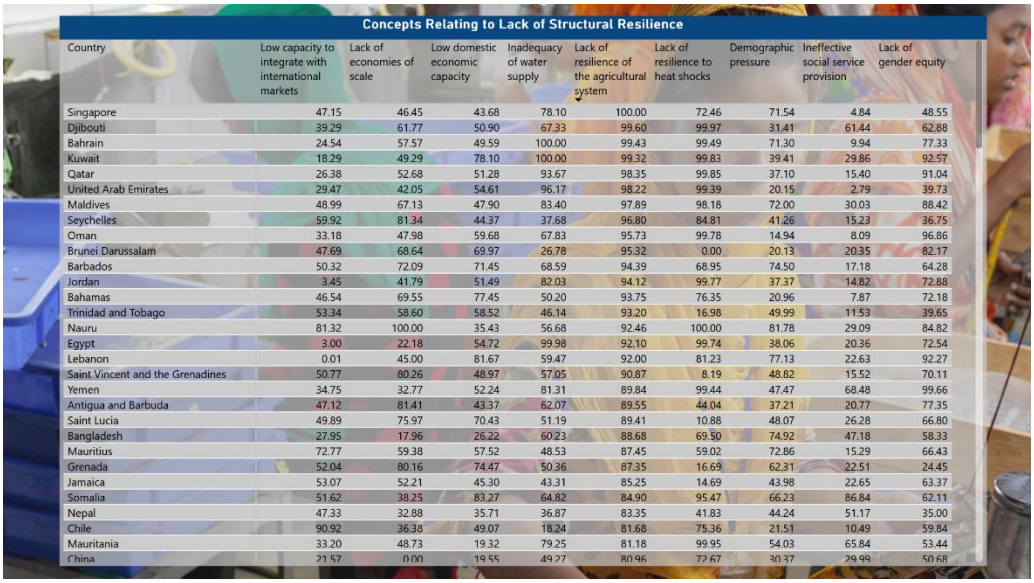
67. The visualization also enables an interpretation of the inherent strengths and capacities of countries in mitigating vulnerability and facilitating a more robust response to adverse events of an economic, environmental, or social nature; or a combination of the three.



68. **Page 5: Economic, Environmental and Social Vulnerability by Country – Radar Chart** focuses on the relationships between the three dimensions of vulnerability: economic, environmental, and social. The radar chart shows the varying relationships between economic, environmental and social vulnerability by country. Some countries have higher economic vulnerability compared to environmental and social vulnerability while other countries with high economic vulnerability exhibit higher social vulnerability compared to their economic and environmental vulnerability.



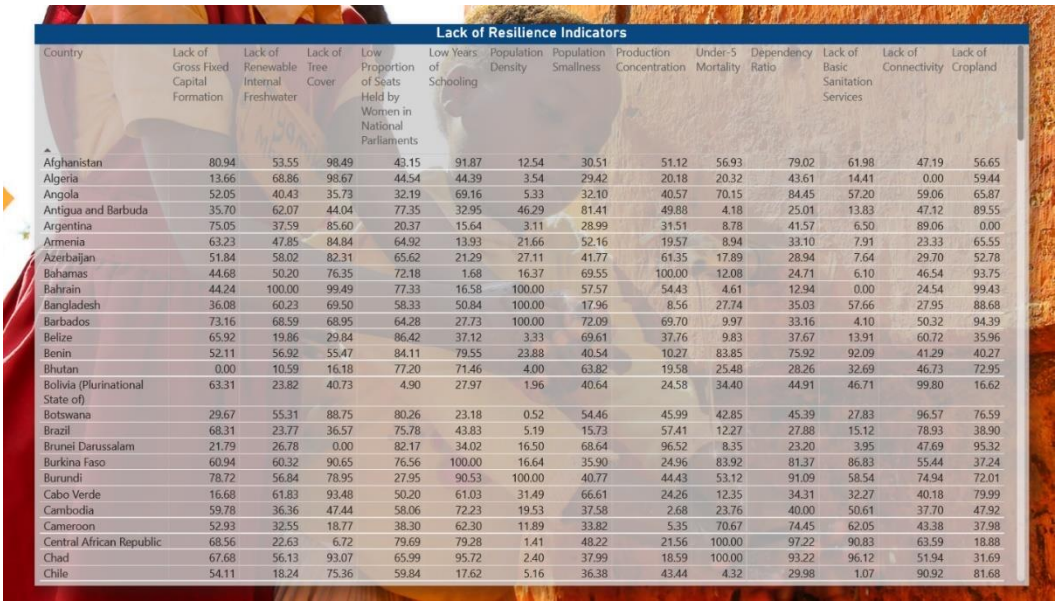
69. **Page 6: The table illustrating concepts relating to lack of structural resilience** displays the data associated with the nine concepts used to determine lack of structural resilience, ranging from low capacity to integrate with international markets, through to lack of gender equity.



Concepts Relating to Lack of Structural Resilience

Country	Low capacity to integrate with international markets	Lack of economies of scale	Low domestic economic capacity	Inadequacy of water supply	Lack of resilience of the agricultural system	Lack of resilience to heat shocks	Demographic pressure	Ineffective social service provision	Lack of gender equity
Singapore	47.15	46.45	43.68	78.10	100.00	72.46	71.54	4.84	48.55
Djibouti	39.29	61.77	50.90	67.33	99.60	99.97	31.41	61.44	62.88
Bahrain	24.54	57.57	49.59	100.00	99.43	99.49	71.30	9.94	77.33
Kuwait	18.29	49.29	78.10	100.00	99.32	99.83	39.41	29.86	92.57
Qatar	26.38	52.68	51.28	93.67	98.35	99.85	37.10	15.40	91.04
United Arab Emirates	29.47	42.05	54.61	96.17	98.22	99.39	20.15	2.79	39.73
Maldives	48.99	67.13	47.90	83.40	97.89	98.18	72.00	30.03	88.42
Seychelles	59.92	81.34	44.37	37.68	96.80	84.81	41.26	15.23	36.75
Oman	33.18	47.98	59.68	67.83	95.73	99.78	14.94	8.09	96.86
Brunei Darussalam	47.69	68.64	69.97	26.78	95.32	0.00	20.13	20.35	82.17
Barbados	50.32	72.09	71.45	68.59	94.39	68.95	74.50	17.18	64.28
Jordan	3.45	41.79	51.49	82.03	94.12	99.77	37.37	14.82	72.88
Bahamas	46.54	69.55	77.45	50.20	93.75	76.35	20.96	7.87	72.18
Trinidad and Tobago	53.34	58.60	58.52	46.14	93.20	16.98	49.99	11.53	39.65
Nauru	81.32	100.00	35.43	56.68	92.46	100.00	81.78	29.09	84.82
Egypt	3.00	22.18	54.72	99.98	92.10	99.74	38.06	20.36	72.54
Lebanon	0.01	45.00	81.67	59.47	92.00	81.23	77.13	22.63	92.27
Saint Vincent and the Grenadines	50.77	80.26	48.97	57.05	90.87	8.19	48.82	15.52	70.11
Yemen	34.75	32.77	52.24	81.31	89.84	99.44	47.47	68.48	99.66
Antigua and Barbuda	47.12	81.41	43.37	62.07	89.55	44.04	37.21	20.77	77.35
Saint Lucia	49.89	75.97	70.43	51.19	89.41	10.88	48.07	26.28	66.80
Bangladesh	27.95	17.96	26.22	60.23	88.68	69.50	74.92	47.18	58.33
Mauritius	72.77	59.38	57.52	48.53	87.45	59.02	72.86	15.29	66.43
Grenada	52.04	80.16	74.47	50.36	87.35	16.69	62.31	22.51	24.45
Jamaica	53.07	52.21	45.30	43.31	85.25	14.69	43.98	22.65	63.37
Somalia	51.62	38.25	83.27	64.82	84.90	95.47	66.23	86.84	62.11
Nepal	47.33	32.88	35.71	36.87	83.35	41.83	44.24	51.17	35.00
Chile	90.92	36.38	49.07	18.24	81.68	75.36	21.51	10.49	59.84
Mauritania	33.20	48.73	19.32	79.25	81.18	99.95	54.03	65.84	53.44
China	21.57	0.00	19.55	49.27	80.96	72.67	30.37	29.99	50.68

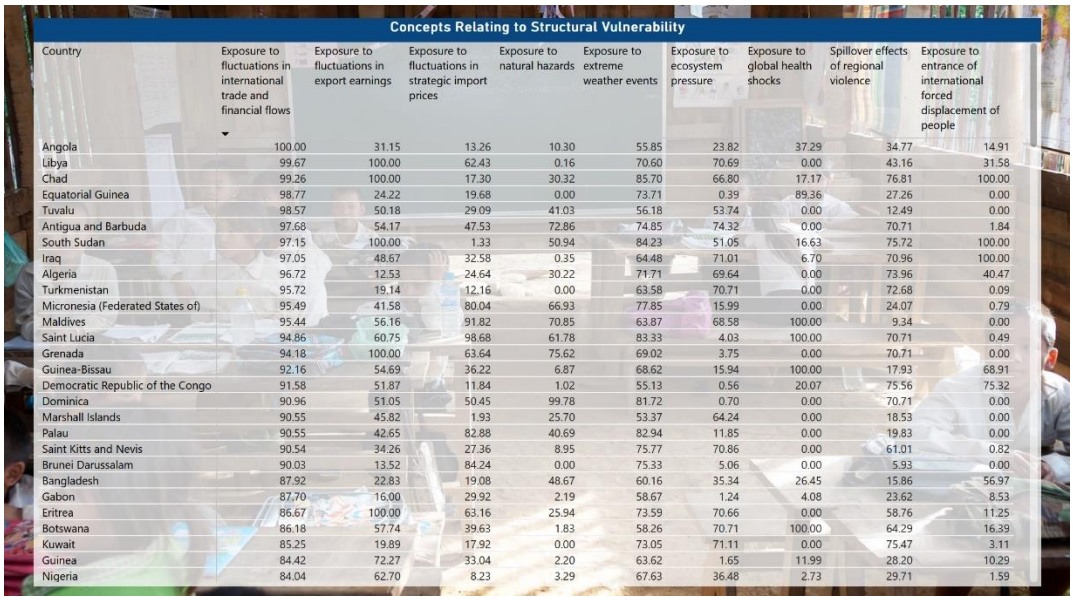
70. **Page 7: Lack of Resilience Indicators** displays the raw data for the thirteen indicators on lack of resilience ranging from lack of gross fixed capital formation to lack of cropland. Users can sort by indicator from highest to lowest (or vice versa) to see how countries rank on the selected indicator.



Lack of Resilience Indicators

Country	Lack of Gross Fixed Capital Formation	Lack of Renewable Internal Freshwater	Lack of Tree Cover	Low Proportion of Seats Held by Women in National Parliaments	Low Years of Schooling	Population Density	Population Smallness	Production Concentration	Under-5 Mortality	Dependency Ratio	Lack of Basic Sanitation Services	Lack of Connectivity	Lack of Cropland
Afghanistan	80.94	53.55	98.49	43.15	91.87	12.54	30.51	51.12	56.93	79.02	61.98	47.19	56.65
Algeria	13.66	68.86	98.67	44.54	44.39	3.54	29.42	20.18	20.32	43.61	14.41	0.00	59.44
Angola	52.05	40.43	35.73	32.19	69.16	5.33	32.10	40.57	70.15	84.45	57.20	59.06	65.87
Antigua and Barbuda	35.70	62.07	44.04	77.35	32.95	46.29	81.41	49.88	4.18	25.01	13.83	47.12	89.55
Argentina	75.05	37.59	85.60	20.37	15.64	3.11	28.99	31.51	8.78	41.57	6.50	89.06	0.00
Armenia	63.23	47.85	84.84	64.92	13.93	21.66	52.16	19.57	8.94	33.10	7.91	23.33	65.55
Azerbaijan	51.84	58.02	82.31	65.62	21.29	27.11	41.77	61.35	17.89	28.94	7.64	29.70	52.78
Bahamas	44.68	50.20	76.35	72.18	1.68	16.37	69.55	100.00	12.08	24.71	6.10	46.54	93.75
Bahrain	44.24	100.00	99.49	77.33	16.58	100.00	57.57	54.43	4.61	12.94	0.00	24.54	99.43
Bangladesh	36.08	60.23	69.50	58.33	50.84	100.00	17.96	8.56	27.74	35.03	57.66	27.95	88.68
Barbados	73.16	68.59	68.95	64.28	27.73	100.00	72.09	69.70	9.97	33.16	4.10	50.32	94.39
Belize	65.92	19.86	29.84	86.42	37.12	3.33	69.61	37.76	9.83	37.67	13.91	60.72	35.96
Benin	52.11	56.92	55.47	84.11	79.55	23.88	40.54	10.27	83.85	75.92	92.09	41.29	40.27
Bhutan	0.00	10.59	16.18	77.20	71.46	4.00	63.82	19.58	25.48	28.26	32.69	46.73	72.95
Bolivia (Plurinational State of)	63.31	23.82	40.73	4.90	27.97	1.96	40.64	24.58	34.40	44.91	46.71	99.80	16.62
Botswana	29.67	55.31	88.75	80.26	23.18	0.52	54.46	45.99	42.85	45.39	27.83	96.57	76.59
Brazil	68.31	23.77	36.57	75.78	43.83	5.19	15.73	57.41	12.27	27.88	15.12	78.93	38.90
Brunei Darussalam	21.79	26.78	0.00	82.17	34.02	16.50	68.64	96.52	8.35	23.20	3.95	47.69	95.32
Burkina Faso	60.94	60.32	90.65	76.56	100.00	16.64	35.90	24.96	83.92	81.37	86.83	55.44	37.24
Burundi	78.72	56.84	78.95	27.95	90.53	100.00	40.77	44.43	53.12	91.09	58.54	74.94	72.01
Cabo Verde	16.68	61.83	93.48	50.20	61.03	31.49	66.61	24.26	12.35	34.31	32.27	40.18	79.99
Cambodia	59.78	36.36	47.44	58.06	72.23	19.53	37.58	2.68	23.76	40.00	50.61	37.70	47.92
Cameroon	52.93	32.55	18.77	38.30	62.30	11.89	33.82	5.35	70.67	74.45	62.05	43.38	37.98
Central African Republic	68.56	22.63	6.72	79.69	79.28	1.41	48.22	21.56	100.00	97.22	90.83	63.59	18.88
Chad	67.68	56.13	93.07	65.99	95.72	2.40	37.99	18.59	100.00	93.22	96.12	51.94	31.69
Chile	54.11	18.24	75.36	59.84	17.62	5.16	36.38	43.44	4.32	29.98	1.07	90.92	81.68

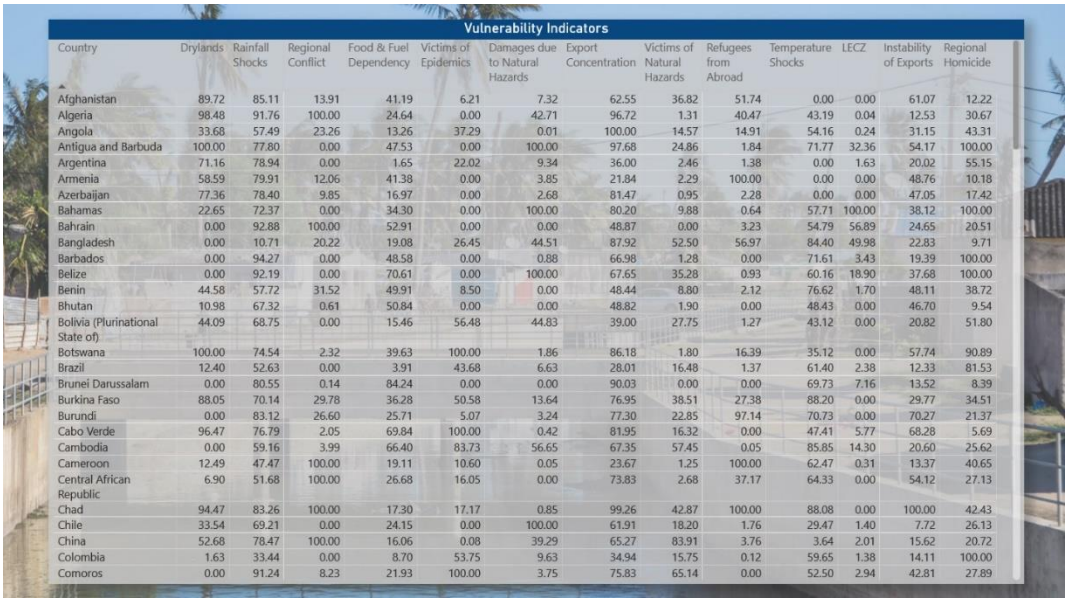
71. **Page 8: Concepts relating to structural vulnerability** displays the data related to the nine concepts used to determine structural vulnerability, ranging from exposure to fluctuations in international trade and financial flows, through to exposure to entrance of international forced displacement of people.



Concepts Relating to Structural Vulnerability

Country	Exposure to fluctuations in international trade and financial flows	Exposure to fluctuations in export earnings	Exposure to fluctuations in strategic import prices	Exposure to natural hazards	Exposure to extreme weather events	Exposure to ecosystem pressure	Exposure to global health shocks	Spillover effects of regional violence	Exposure to entrance of international forced displacement of people
Angola	100.00	31.15	13.26	10.30	55.85	23.82	37.29	34.77	14.91
Libya	99.67	100.00	62.43	0.16	70.60	70.69	0.00	43.16	31.58
Chad	99.26	100.00	17.30	30.32	85.70	66.80	17.17	76.81	100.00
Equatorial Guinea	98.77	24.22	19.68	0.00	73.71	0.39	89.36	27.26	0.00
Tuvalu	98.57	50.18	29.09	41.03	56.18	53.74	0.00	12.49	0.00
Antigua and Barbuda	97.68	54.17	47.53	72.86	74.85	74.32	0.00	70.71	1.84
South Sudan	97.15	100.00	1.33	50.94	84.23	51.05	16.63	75.72	100.00
Iraq	97.05	48.67	32.58	0.35	64.48	71.01	6.70	70.96	100.00
Algeria	96.72	12.53	24.64	30.22	71.71	69.64	0.00	73.96	40.47
Turkmenistan	95.72	19.14	12.16	0.00	63.58	70.71	0.00	72.68	0.09
Micronesia (Federated States of)	95.49	41.58	80.04	66.93	77.85	15.99	0.00	24.07	0.79
Maldives	95.44	56.16	91.82	70.85	63.87	68.58	100.00	9.34	0.00
Saint Lucia	94.86	60.75	98.68	61.78	83.33	4.03	100.00	70.71	0.49
Grenada	94.18	100.00	63.64	75.62	69.02	3.75	0.00	70.71	0.00
Guinea-Bissau	92.16	54.69	36.22	6.87	68.62	15.94	100.00	17.93	68.91
Democratic Republic of the Congo	91.58	51.87	11.84	1.02	55.13	0.56	20.07	75.56	75.32
Dominica	90.96	51.05	50.45	99.78	81.72	0.70	0.00	70.71	0.00
Marshall Islands	90.55	45.82	1.93	25.70	53.37	64.24	0.00	18.53	0.00
Palau	90.55	42.65	82.88	40.69	82.94	11.85	0.00	19.83	0.00
Saint Kitts and Nevis	90.54	34.26	27.36	8.95	75.77	70.86	0.00	61.01	0.82
Brunei Darussalam	90.03	13.52	84.24	0.00	75.33	5.06	0.00	5.93	0.00
Bangladesh	87.92	22.83	19.08	48.67	60.16	35.34	26.45	15.86	56.97
Gabon	87.70	16.00	29.92	2.19	58.67	1.24	4.08	23.62	8.53
Eritrea	86.67	100.00	63.16	25.94	73.59	70.66	0.00	58.76	11.25
Botswana	86.18	57.74	39.63	1.83	58.26	70.71	100.00	64.29	16.39
Kuwait	85.25	19.89	17.92	0.00	73.05	71.11	0.00	75.47	3.11
Guinea	84.42	72.27	33.04	2.20	63.62	1.65	11.99	28.20	10.29
Nigeria	84.04	62.70	8.23	3.29	67.63	36.48	2.73	29.71	1.59

72. **Page 9: Vulnerability indicators** displays the raw data for the thirteen indicators for vulnerability ranging from drylands to regional homicide. Users can sort by indicator from highest to lowest (or vice versa) to see how countries rank on the selected indicator.



Vulnerability Indicators

Country	Drylands	Rainfall Shocks	Regional Conflict	Food & Fuel Dependency	Victims of Epidemics	Damages due to Natural Hazards	Export Concentration	Victims of Natural Hazards	Refugees from Abroad	Temperature Shocks	LECZ	Instability of Exports	Regional Homicide
Afghanistan	89.72	85.11	13.91	41.19	6.21	7.32	62.55	36.82	51.74	0.00	0.00	61.07	12.22
Algeria	98.48	91.76	100.00	24.64	0.00	42.71	96.72	1.31	40.47	43.19	0.04	12.53	30.67
Angola	33.68	57.49	23.26	13.26	37.29	0.01	100.00	14.57	14.91	54.16	0.24	31.15	43.31
Antigua and Barbuda	100.00	77.80	0.00	47.53	0.00	100.00	97.68	24.86	1.84	71.77	32.36	54.17	100.00
Argentina	71.16	78.94	0.00	1.65	22.02	9.34	36.00	2.46	1.38	0.00	1.63	20.02	55.15
Armenia	58.59	79.91	12.06	41.38	0.00	3.85	21.84	2.29	100.00	0.00	0.00	48.76	10.18
Azerbaijan	77.36	78.40	9.85	16.97	0.00	2.68	81.47	0.95	2.28	0.00	0.00	47.05	17.42
Bahamas	22.65	72.37	0.00	34.30	0.00	100.00	80.20	9.88	0.64	57.71	100.00	38.12	100.00
Bahrain	0.00	92.88	100.00	52.91	0.00	0.00	48.87	0.00	3.23	54.79	56.89	24.65	20.51
Bangladesh	0.00	10.71	20.22	19.08	26.45	44.51	87.92	52.50	56.97	84.40	49.98	22.83	9.71
Barbados	0.00	94.27	0.00	48.58	0.00	0.88	66.98	1.28	0.00	71.61	3.43	19.39	100.00
Belize	0.00	92.19	0.00	70.61	0.00	100.00	67.65	35.28	0.93	60.16	18.90	37.68	100.00
Benin	44.58	57.72	31.52	49.91	8.50	0.00	48.44	8.80	2.12	76.62	1.70	48.11	38.72
Bhutan	10.98	67.32	0.61	50.84	0.00	0.00	48.82	1.90	0.00	48.43	0.00	46.70	9.54
Bolivia (Plurinational State of)	44.09	68.75	0.00	15.46	56.48	44.83	39.00	27.75	1.27	43.12	0.00	20.82	51.80
Botswana	100.00	74.54	2.32	39.63	100.00	1.86	86.18	1.80	16.39	35.12	0.00	57.74	90.89
Brazil	12.40	52.63	0.00	3.91	43.68	6.63	28.01	16.48	1.37	61.40	2.38	12.33	81.53
Brunei Darussalam	0.00	80.55	0.14	84.24	0.00	0.00	90.03	0.00	0.00	69.73	7.16	13.52	8.39
Burkina Faso	88.05	70.14	29.78	36.28	50.58	13.64	76.95	38.51	27.38	88.20	0.00	29.77	34.51
Burundi	0.00	83.12	26.60	25.71	5.07	3.24	77.30	22.85	97.14	70.73	0.00	70.27	21.37
Cabo Verde	96.47	76.79	2.05	69.84	100.00	0.42	81.95	16.32	0.00	47.41	5.77	68.28	5.69
Cambodia	0.00	59.16	3.99	66.40	83.73	56.65	67.35	57.45	0.05	85.85	14.30	20.60	25.62
Cameroon	12.49	47.47	100.00	19.11	10.60	0.05	23.67	1.25	100.00	62.47	0.31	13.37	40.65
Central African Republic	6.90	51.68	100.00	26.68	16.05	0.00	73.83	2.68	37.17	64.33	0.00	54.12	27.13
Chad	94.47	83.26	100.00	17.30	17.17	0.85	99.26	42.87	100.00	88.08	0.00	100.00	42.43
Chile	33.54	69.21	0.00	24.15	0.00	100.00	61.91	18.20	1.76	29.47	1.40	7.72	26.13
China	52.68	78.47	100.00	16.06	0.08	39.29	65.27	83.91	3.76	3.64	2.01	15.62	20.72
Colombia	1.63	33.44	0.00	8.70	53.75	9.63	34.94	15.75	0.12	59.65	1.38	14.11	100.00
Comoros	0.00	91.24	8.23	21.93	100.00	3.75	75.83	65.14	0.00	52.50	2.94	42.81	27.89

CHAPTER 5 – THE VULNERABILITY-RESILIENCE COUNTRY RESILIENCE PROFILES

I. Introduction

73. The VRCP are the second element in the MVI structure. The VRCP are intended to complement the assessment of the MVI and are to be developed by vulnerable countries to provide granularity and greater characterization of country-specific vulnerability and resilience factors. Linking the VRCP to the MVI acknowledges the variety of country contexts behind similar levels of vulnerability and country-specific pathways to close the vulnerability-resilience gap.

II. The VRCP and its objectives

74. The VRCP is a deeper, country-level diagnosis of a country's vulnerability and resilience conditions to enable the identification of key policy and other actions to build resilience, including appropriately costed responses. The VRCP is not meant to be a stand-alone product. As such, it should be reinforcing, directly contributing to and an integral part of existing national processes, particularly the formulation of National Development Plans (NDPs), Integrated National Financing Frameworks (INFFs) and Voluntary National Reviews (VNRs). Moreover it can also provide a framework for managing and channeling international assistance to ensure that countries can better manage their vulnerabilities and build resilience to sustain progress and achieve irreversible gains.

75. The VRCP objectives are to:

- Provide a detailed, multi-dimensional vulnerability and resilience characterization at national level.
- Articulate and recommend priority, integrated, and costed interventions for resilience building at national level.
- Enhance, inform, and contribute to the formulation, implementation, and monitoring cycle of National Development Planning processes.

76. In effect, the VRCP is the means through which countries transition from quantitative assessments of their vulnerability, toward the formulation of appropriate policies. This, in turn, facilitates the selection and prioritization of investments that are required to promote development objectives while also strengthening the country's internal resilience capacity. The VRCP not only functions as an assessment tool, but a tool to deploy policies within a coherent, consistent framework that can be monitored. This provides a pathway, aligning the country's current position with its envisioned state according to national sustainable development goals.

77. The detailed vulnerability and resilience characterization will be driven by an "extended dashboard" of indicators that are based on national priorities and available data. The extended dashboard provides a platform for monitoring and analysis. They enable a country to see trends quickly and to use them to make data-driven decisions, including where development resources

could be better targeted to build resilience and deliver results. The extended dashboard may include indicators that are structural or non-structural and may reflect both vulnerability and/or resilience conditions. To properly characterize important national vulnerability and resilience conditions, the extended dashboard could incorporate indicators taken from various sources, including but not limited to the following 5 key thematic areas and measuring key issues that are important for both vulnerability assessment and resilience building. While the list below is not exhaustive, it depicts the range of the thematic areas that could complement the selection of MVI indicators, in that they examine issues that are not currently considered in the global MVI index (on-structural factors) but are important to further contextualize a country's particular situation.

- **Productive capacities indicators** (for example, advancing digitalization; Leveraging knowledge creation; Economic diversification, etc),
- **Social indicators** (for example, building Human Resources; Health care; Social Protection and Labour; Gender Equality, etc.)
- **Environmental indicators** (for example, climate change adaptation; Promoting sustainable energy; Environmental Sustainability, etc)
- **Institutional indicators** (for example, Property Rights & Rule-based Governance; Quality of Public Administrations and public institutions; Quality of Budgeting and Financial Management, etc.)
- **Financial indicators** (for example, Diversified Financing Ecosystem; Strong regulatory environment, debt issues, etc.)

78. By tracking these areas and through the development of actionable road maps, the VRCP could provide entry points for IFIs and other development partners. This would complement national efforts towards resilience building, including through smarter and better targeted resource allocations. Further work on the identification of a broad set of possible indicators for the dashboard could be advanced by the Secretariat that will be identified for the custodial arrangements for the MVI.

III. Guiding principles for the development and use of the VRCP

79. The VRCPs will be of high relevance to governments if developed through an inclusive, participatory, transparent, and thorough process of consultation at national and sub-national levels. If designed as a direct input to the national planning and budgeting process, it can ensure that countries better address their vulnerabilities and build resilience to sustain progress and achieve irreversible gains in the frame of respective national development plans.

80. The following principles should also guide their development and use:

- VRCP development should be country-led and strictly voluntary.

- Development of the VRCP should be reinforcing, contributing to and an integral part of existing national development planning processes, particularly the formulation of National Development Plans (NDPs), Integrated National Financing Frameworks (INFFs) and Voluntary National Reviews (VNRs). This will ensure national programmatic coherence and ownership, economies of scale, and the placement of vulnerability analysis and resilience building at the core of the process. The monitoring and evaluation of the VRCP should not be a stand-alone process. It must be fully embedded in the country's monitoring and evaluation mechanisms under the framework of the implementation of its National Development Plan, and the SDGs.

- The VRCP should consider different national realities, capacities, levels of development as well as policy space and priorities. To the extent possible, VRCP development processes should be integrated into existing national consultative and decision-making mechanisms, taking a 'whole of government' approach.

- The VRCP should maintain a medium to long term perspective, in line with the long-term national development plans. It should facilitate the use of a system thinking approach to resilience building, which fosters policy coherence and allows a country to identify, in an integrated manner, entry points where investments would have the greatest impacts.

- The VRCP should be based on evidence, informed by country-led evaluations and data which is of the highest-quality, available, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts.

- The VRCP should allow the consideration of structural and non-structural (including policy-induced) indicators as well as quantitative and qualitative indicators of vulnerability and resilience.

81. With these principles, the VRCPs should be able to facilitate actions to address national vulnerability and build resilience through: Risk-informed national, bilateral and multilateral cooperation policies; Evidence-based partnership development; Smarter resource allocations and strategic donor alignment to national priorities; Design of innovative financing mechanisms and approaches to debt restructuring.

IV. Coordination and methodology

82. To ensure the effective roll out of the VRCP, a team dedicated to supporting national efforts on them, should be established within the MVI Secretariat. The work of the VRCP team should be guided by the Independent MVI Advisory Review Panel (see Chapter 6) and by the availability of resources, mobilized from all sources to support global coordination on the VRCP and to the extent possible/practical, national implementation.

83. Guidance for developing a VRCP should be formulated into a VRCP handbook.[43] The production of a VRCP Handbook could be delegated to the custodial body for the MVI as an early output. The VRCP Handbook will also provide a standard structure for VRCP formulation in order to ensure consistency and comparability between VRCPs.

[43] Currently there are a plethora of approaches to developing 'country profiles' and vulnerability assessments. These vulnerability assessments and profiles vary from regional to national ones or the more generic, to the more specific ones, for example, the WB/IMFs Financial Sector Assessment Programme (FSAP). The common thread among these assessments, is that they include a coherent approach/structure that links a baseline assessment diagnosing challenges and strengths to key strategic reforms. In most instances, a roadmap for technical assistance needs that have been agreed with the government are also included. Some vulnerability related country profile and assessment examples are available from UNCDP, UNCTAD, ADB, World Bank, European Union, WHO, UNEP, FAO, UNHABITAT. A more detailed study of the various methodologies and approaches will be important to learn any lessons, and to develop a VRCP Handbook following the set of principles outlined in this report. Work on vulnerability and resilience profiling was also carried out the Commonwealth secretariat in 2009/2010. See https://www.amazon.com/Profiling-Vulnerability-Resilience-Manual-States/dp/1849290350

CHAPTER 6 – PROPOSED GOVERNANCE ARRANGEMENTS FOR THE MVI

I. Introduction

84. Evidence based recommendations on "*the most appropriate governance arrangements for the MVI, including modalities for the publication of MVI results and procedures for reviewing and/or revising the MVI and its components"* are the second deliverable articulated in the Panel's Terms of Reference.

II. Consultations

85. To propose the most appropriate governance arrangements for the MVI, the Panel first conducted broad consultations with relevant UN and other entities, currently responsible for the upkeep and monitoring of existing indices to see best practices.

86. As a general approach, the Panel took note of mandates, organizational structures, numerical composition and budgetary arrangements of the entities being consulted. Other information gathered included duration of service of their personnel, reporting channels, appointing authorities, roles and functions, including capacity support initiatives and the nature of their relationships with member States and with the office of the UN Secretary-General.

87. The Panel consulted with the following:

- UNDP on their Human Development Index (HDI) and the Multidimensional Poverty Index (MPI);
- The ECOSOC's Committee for Development Policy which presently is responsible *including* for the upkeep of indices for determining the criteria for the inclusion and graduation of Least Developed Countries (LDCs);
- The Organization for Economic Co-operation and Development (OECD) on their Multi-dimensional Fragility Framework;
- the World Bank (WB) on their Human Capital Index; and
- the United Nations Conference on Trade and Development (UNCTAD) on their Productive Capacity Index (PCI).

III. Findings

88. The Panel noted several common elements that offered good guidance for custodial arrangements for the proposed MVI framework as follows:

(i) All Indices had very *clear objective(s) or purpose(s), with* clearly identified factors to be measured, including outcomes and results that targets identified specific issue(s).

(ii) Most, had very *clear and well-defined organizational structure(s)*, featuring a two-layered organizational arrangement: the first layer comprising a salaried secretariat component responsible, *among others,* for the upkeep, maintenance and preparing reports on the indices; and the second layer with an independent, non-salaried expert panel component responsible for overseeing and making vital and strategic decisions relating to the review of the indices.

(iii) All entities had *clear channels of communication* and a credible *line of reporting* between and among personnel in each of the respective layers of their organizational structures, including with their external stakeholders.

(iv) All entities had *competent and qualified personnel* or groups of individuals tasked with *specific responsibilities* in each of the layers of their organizational structures. Some of these personnel were salaried staff members of the institutions consulted, others served in their independent personal capacity, without remuneration.

(v) All entities had *clear lines of reporting* or *consultation mechanisms with member States*. Some were mandated to periodically submit reports, while others do so as part of their internal periodic reporting cycle requirements.

(vi) All entities had specific *capacity development components* in their work programme

(vii) All organizations acknowledged the importance and sacredness of data, its availability, reliability, and transparency in facilitating and enhancing the credibility of their index.

IV. MVI governance: the guiding principles

89. In order to secure broader support and confidence in its credibility, transparency and independence, any governance arrangement for the MVI framework should be guided by the following principles:

(i) ***Independence,*** which relates to the independent function(s) and role(s) of the custodian body responsible for the upkeep, maintenance, and reporting of MVI.
(ii) ***Transparency*** in the mandate(s), structure, work modalities, channel of communication and line of reporting of the entity or bodies created to monitor, maintain, and review the MVI. The transparency principle also applies to the data used in the MVI, the sources, their validation, aggregation, reporting and review.
(iii) ***Functionality*** refers to the ability of certain relevant elements/decisions to contribute positively and ensure that the MVI performs or delivers its intended functions or results (fit for purpose). It may apply to and may be relevant for the identification and selection by member States of the possible home or custodian body of the MVI and the ability of positively influencing uptake of the MVI, from all stakeholders within and outside the UN system.

(iv) ***Accountability*** of the custodian body and its personnel to their respective mandate(s), role(s) and function(s). Accountability to the appointing authority and to member States.

(v) ***Sustainability*** refers to the need for securing the provision of adequate, predictable, and reliable resources to ensure continuous support for the independent monitoring, maintenance, review, and report of the MVI.

V. MVI governance requirements

90. The following are recommended as essential components for a credible, independent governance arrangement for the proposed MVI framework:

(i) The recommended custodian arrangement of the MVI

91. The MVI will be best governed, served and maintained by two distinct bodies, co-located for administrative purposes, in a United Nations entity or department, comprising of:

(a) an ***MVI Secretariat,*** with similar arrangements to those employed by the CDP Secretariat (UNDESA) or the UNDP Human Development Report Office (HDRO); and

(b) The ***Independent MVI Advisory Review Panel***, mirroring the arrangements adopted by the UNCTAD's PCI High Level Advisory Body, the UNDP's Statistical Advisory Board (SAB) and or by the ECOSOC's CDP.

(ii) The recommended roles, functions, and personnel

92. The roles and functions of the ***MVI Secretariat*** could include *inter alia*: (i) *Operational issues* e.g. index construction and maintenance (ii) *Analytical/substantive issues* e.g. index revisions and improvement; (iii) *Secretariat support services* and (iv) *Capacity Building services* – formulate and implement capacity development and policy-advisory activities, including on the VRCP.

93. The personnel serving in the ***Independent MVI Advisory Review Panel*** do so in their personal capacity and their roles and functions may include but are not limited to making technical and strategic decisions on MVI related matters such as, methods of calculations, issues surrounding variables, on concepts, on aggregation techniques, on additional indicators to be included in the MVI and periodicity of reporting. The Review Panel will also be required to consider, endorse and/or agree on any recommended MVI results prepared by the Secretariat and on the modalities for their publication and dissemination.

(i) Numerical Composition, Location and Appointing Authority

94. Staffing complements vary across the various indices consulted. For example the OECD's State of Fragility Framework **has 3** analysts, reporting to the International Network on Conflict and Fragility (INCAF), a network of **30** OECD Development Assistance Committee (DAC) members and **8** key multilateral agencies; while the CDP has 7 **personnel,** and UNCTAD a **20-member** Statistical Technical Task Team (TTT).

95. For the appointing authority, while any configuration is possible, it may be helpful if the UN General Assembly, has a role in this regard. This will ensure that the governance mechanism of the MVI is well placed to influence uptake by member States, the UN system and from organizations outside the UN system. In the case of the MVI Secretariat, appointment of members is best left to the eventual custodian body housing the MVI to identify, select and appoint competent and qualified personnel for this body in accordance with the recruitment policy of the organization concerned.

96. For the independent Review Panel, however, inspiration could be drawn from the CDP where the members of the CDP are nominated by the UN Secretary-General after consultation with interested Governments and nominations are approved by ECOSOC. Personnel in the CDP secretariat are appointed by the Under-Secretary-General for UN DESA under delegated authority from the UN Secretary General; UNCTAD where the Secretary-General of UNCTAD appoints both the members of the UNCTAD's TTT and HAB; or from UNDP's HRO who are appointed by the Administrator of UNDP while the members of the SAB are identified and administered by UNDP's HDRO).

(ii) Budget and Reporting line

97. The ***MVI Secretariat***, in the Panel's assessment, will be the only body, under its recommended custodial arrangement, attracting budgetary considerations for personal emoluments and administrative and logistics support. Experts serving in the ***Independent MVI Review Panel*** will do so in their personal capacity, without remuneration. It should however be noted that resources will need to be identified for expert members' travel and per diem to attend in-person meetings, should there be any.

98. The Panel has previously also indicated its preference for the custodian body for the MVI to report to the UN General Assembly at intervals to be decided by member States. All entities consulted submit reports on an annual basis. In its consideration of the potential budgetary implications of the MVI custodian arrangement and line of reporting, member States may wish to be guided by the principles stipulated in paragraph 89 above.

CHAPTER 7 – USES OF THE MVI

99. The Secretary General in Para 84-85 of A/76/211 recommended several possible uses of an MVI. While the specific use will depend on stakeholder needs, the following represents a non-exhaustive list as articulated by the Secretary General's report:

- To facilitate action to address vulnerability and build in-country resilience through the development of evidence-based policies and partnerships;
- To facilitate evidence-based, targeted and effective support and smarter resource allocations;
- To complement performance-based allocation models, allowing the use of a vulnerability component;
- To support and guide the design of innovative financing mechanisms and act as a vehicle for providing exemptions or wider eligibility with regard to the rules governing access to development and concessional financing;
- To serve as an advocacy tool to promote the principle of leaving no one behind;
- To serve as a tool for monitoring, evaluating and measuring vulnerability and relevant policies
- To support and guide the formulation of country vulnerability resilience profiles;
- To be used for evidence-based decision-making and the development of smarter, risk-informed national, bilateral and multilateral cooperation policies;
- To inform United Nations in-country engagement and to support the preparation of country graduation strategies;
- To serve as a tool to inform approaches to debt restructuring, to act as a vehicle to extend eligibility for comprehensive debt treatment and to allow exceptional eligibility for vulnerable States.

100. The MVI framework, particularly through the implementation of the VRCP, assists countries in formulating strategies to enhance well-being by identifying their specific vulnerabilities and comparing them with other countries. The VRCP is intended to be a useful instrument to move beyond a universal assessment of vulnerability and focus on specific data that provide a more accurate depiction of the situation in individual countries.

101. The MVI's use for development support, including concessional finance and debt, is key. The MVI could also serve as a tool to inform approaches to debt restructuring, to act as a vehicle to extend eligibility for comprehensive debt treatment and to allow exceptional eligibility for vulnerable States. In this regard, in 2021, the Economic and Social Council forum on financing for sustainable development follow-up, acknowledged the work of the General Assembly on the possible development of an index and tasked the Inter-Agency Task Force on Financing for Sustainable Development to include in its 2022 report an analysis of the potential use of the index for debt restructuring, with the aim of building credit worthiness and expanding access to financing, including concessional financing.

102. The Inter-Agency Task Force (IATF) on Financing for Development report[44] suggests, *inter alia*, that high vulnerability affects a country's capacity to service debt, and that the ability to service debt may vary and fall unexpectedly following shocks. This becomes particularly crucial in an age of growing systemic risks and more frequent and severe natural hazards. The MVI, by reflecting elevated risks of future shocks and their impacts in one indicator, would present a comprehensive measure. High levels of vulnerabilities captured by an MVI could also play a significant role in determining the appropriate level of debt relief necessary for restoring sustainability in the context of debt restructuring.

103. Including vulnerability as an added factor for eligibility in accessing development assistance, encompassing concessional finance and official development assistance (ODA), along with its distribution, could enhance both equitable and effective. This approach would be equitable by addressing the reality that different forms of structural vulnerability hinder sustainable development. It is effective, because research over the past two decades has shown that aid has a higher marginal effectiveness in situations of vulnerability, as it mitigates shocks.[45]

104. Additionally, the United Nations Development Systems (UNDS) should use the MVI as an advocacy tool as well as for prioritizing resource allocation to countries deemed most vulnerable.

[44] https://financing.desa.un.org/sites/default/files/2023-04/FSDR_2022. pdf

[45] Chauvet and Guillaumont (2005), Collier and Goderis (2009), Jain and Bardhan (2023), Savun and Tirone (2012).

CHAPTER 8 – RECOMMENDATIONS AND CONCLUSIONS

105. Securing consensus and broad support for the MVI framework is of critical importance, as this will be the first step in galvanizing action toward its use. It is a relevant input to the preparatory process of the fourth International Conference on Small Island Developing States and other internationally agreed conferences, processes and meetings. The international community has advocated for the inclusion of vulnerability in determining eligibility for development assistance including concessional finance, ODA and debt relief and the MVI is a credible complement to current approaches.

106. To advance the MVI and ensure that the momentum continues, the following recommendations are proposed in three categories as follows:

a) Advancing the MVI in the General Assembly of the United Nations

(i) The MVI framework proposed in this report, is adopted by the General Assembly and should be the basis for any possible further work to improve the framework (if needed).

(ii) On the proposed Custodial arrangements for the MVI framework, the Panel recommends an MVI Secretariat and the Independent MVI Advisory Review Panel co-located for administrative purposes, in a United Nations entity or department. A decision should be taken informed by the examples drawn, and lessons learnt from the findings of the Panel's consultations and guided, among others, by the Panel's recommended guiding principles and by any procedural guidance offered by the Secretary-General. While discussions on this are ongoing an interim secretariat should carry forward the work. In this regard, UN DESA and UN-OHRLLS, within their respective mandates, and within existing resources, continues as interim secretariat for the MVI.

(iii) The VRCP could be pilot tested in a set of developing countries with different features.

(iv) The UN system should begin to mainstream vulnerability and resilience, in a more systematic manner, into UN programs at global, regional and national levels. The MVI could be used to better tailor theories of change, improve country programs and to support resilience building policies and initiatives in country.

b) Advancing the MVI in the international community

(i) Strategic planning and funding for resilience building need to be scaled up to support vulnerable countries that are most exposed to the adverse effects of shocks of various dimensions and origins. A stronger focus on ex-ante strategies is needed as the business case for a preventive rather than curative approach is clear. Considering vulnerability in the international cooperation frameworks of development partners is a critical aspect of its effectiveness.

(ii) The Multilateral Development Banks (MDBs) should be encouraged to pilot test the MVI. This has already begun. The Caribbean Development Bank's Board of Directors on June 21st, 2023 endorsed the formation of a technical working committee drawn from the Bank's membership to advance the work on the MVI, with a view to reviewing its framework that guides access to its concessional financial resources. Further, the MDBs in the recently concluded the Summit for a New Financing Pact committed to "…Explore eligibility to concessional finance for the most vulnerable countries with a multidimensional approach to vulnerability, encompassing economic, environmental, and social dimensions. To facilitate cooperation, MDBs could explore a common definition of vulnerability, taking into account the United Nations workstream in that regard, and could develop common guidelines for the targeted use of concessional finance to address vulnerabilities."[46] The IFIs should also be encouraged to closely explore how best the MVI could be incorporated into existing policies and practices.

(iii) The OECD Development Assistance Committee (DAC) should be encouraged to consider how the MVI and related concepts of vulnerability and resilience could be incorporated into the governance framework for Official Development Assistance (ODA) eligibility and graduation, to complement World Bank income data. This could improve the sustainability of graduation and reduce the risk of reinstatement once graduation has occurred.

c) Capacity building needs

(i) The magnitude of the data challenges in developing countries, in particular SIDS, is alarming. The international community should reflect further on how to address the data challenges and needs of developing countries that will be required to ensure the proper use of the MVI. There is a great need for meaningful partnerships to assist with strengthening capacities of national statistical institutions and for appropriate support to improve data collection and statistical analysis, including high-quality and disaggregated data. Improved statistical systems will also be key to the successful development and use of the VRCP, and for national planning purposes.

(ii) Work should begin on the development of an appropriate debt indicator that could be considered in the MVI. However, the success of this will depend on the extent to which there are rapid improvements in the quality of debt data, and in reporting of debt data. The UN statistical commission could play a key role in advancing this discussion.

[46] Multilateral Development Banks vision statement, the Summit for a New Global Financing Pact, available from https://nouveaupactefinancier.org/pdf/multilateral-development-banks-vision-statement.pdf. [Accessed 6/8/2023]

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ANNEX 1: List of indicators considered but ultimately not included in the MVI prototype ordered by dimension

Indicator name	Suggested / Possible rationale	Reason for exclusion
Economic Vulnerability		
Trade openness (Exports plus Imports over GDP)	Countries that are open to trade are more vulnerable to suffer global economic shocks.	· Empirical evidence on this matter was not consistent. · Theory of change not supported by recent evidence. For instance, seeMontalbano,(2011)
Capital account liberalization	Capital account liberalization refers to easing restrictions on capital flows across a country's borders and measures vulnerability against fluctuations in international financial flows.	· Significant data issue. · Rules and regulations are non-structural.
External debt service as a share of export revenues	The vulnerability of developing countries to international financial flows primarily stems from a series of boom-and-bust phases that may render their external debt unsustainable and undermine their capacity to finance sustainable development.	· Significant missing data issue. · Like other available debt-related indicators, this particular indicator is not exempt from significant data issues related to measurement errors and lack of comparability, such as SOEs debt, non-Paris Club debt, incompatible standards and definitions, etc.
Share of agriculture, forestry, fisheries in GDP	The indicator reflects the exposure of countries caused by their economic structure because agriculture, forestry and fisheries are particularly exposed to natural shocks and international price fluctuations. (Share of agriculture,	· Theory of change not supported by recent evidence. For instance, see Jayne et al. (2021)

Indicator name	Suggested / Possible rationale	Reason for exclusion
	forestry, fisheries as a percentage of GDP).	
Remittances flows over GDP or volatility of remittances flows	This indicator captures the risk to which the country is subject by its dependence on external financial flows to support existing levels of consumption and investment. The sharp drop in remittances can lead to severe economic recessions and job losses in countries which are heavily dependent on the remittances flows.	· Theory of change not supported by recent evidence. For instance, see Malpass (2022) · Difficult to assess whether remittances represent a vulnerability or a factor of resilience. Evidence points more toward the latter. · Significant data issues
FDI stock over GDP or volatility of FDI flows	This indicator captures the risk to which the country is subject by its dependence on external financial flows to support existing levels of consumption and investment.	· Indicators are not structural. · Significant data issues
Geographical concentration of Export of goods and services	Any changing patterns of trade, economic performance and changing preferences in major trading partners, when a large proportion of a country's exports are supplied to a limited number of trading partners, can have harmful effects.	· Simplicity: likely correlated with trade openness and export concentration.
Terms of trade instability	Countries with unstable terms of trade have higher investment risk and fiscal instability.	· Simplicity: likely highly correlated with instability of exports of goods and services. · Universality: Does not reflect service trade. · Significant data issues.
Volatility of financial flows	Volatility of financial flows can be a concern for macroeconomic and financial stability	· Difficult to disentangle structural from non-structural factors · Significant data issues

Indicator name	Suggested / Possible rationale	Reason for exclusion
Instability of real GDP growth	Instability in real GDP growth increases uncertainty that limits the ability of countries to implement investment programs and reduce poverty.	· Difficult to disentangle structural from non-structural factors · Overlap with other instability variables.
Tourism receipts (% of GDP)	Countries that highly depend on tourism are more exposed to global shocks and downturns.	· Universality issue · Already captured by the concentration index.
ODA (per capita)	Higher dependence on development finance makes countries vulnerable to instability.	· Not a structural factor.
Instability of agricultural production	The instability of agricultural production measured by volume rather than value reflects the degree to which countries may be affected by natural shocks such as droughts and disturbances in rainfall patterns, and flooding.	· Theory of change already reflected by other indicators (victims and damages) · The link between agricultural production and economic vulnerability is less supported by recent evidence.
Environmental Vulnerability		
Number of natural hazards	The frequency of natural hazards is an important indicator of structural vulnerability which hinders sustainable development through compounding the loss and damage to human welfare	· Vulnerability to natural hazard already well captured in the MVI. · Balance between concepts and simplicity considerations justified not including the indicator.
Interval between natural hazards	The higher the number of hazards within any defined time period, the higher the probability of future hazards with all the associated impacts on sustainable development.	· Simplicity: likely highly correlated with victims and damages.
Internal displacements due to natural hazards	High internal migration is both an expression of vulnerability of the concerned country/society and an adaptive response of people to	· Simplicity: likely highly correlated with victims and damages.

Indicator name	Suggested / Possible rationale	Reason for exclusion
	certain stressors / forms of human insecurity such as food and income insecurity, absent or limited ecosystem and basic services, natural hazards, shocks, and discriminating environments.	
Total deaths due to hydrometeorological natural hazards (drought, flood, storm, extreme temperature, landslide, wildfire) (% of population).	Mortality, injury, displacement or material loss from hazards has a significant human impact on society in terms of loss of life, health, economic, social and cultural assets, access to public services and infrastructure, commerce or work, and psychological consequences.	· Simplicity: Various kinds of shocks already included in victims and damages indicators.
Total deaths due to seismic natural hazards (earthquake, volcanic activity) (% of population).	Mortality, injury, displacement or material loss from hazards has a significant human impact on society in terms of loss of life, health, economic, social and cultural assets, access to public services and infrastructure, commerce or work, and psychological consequences.	· Simplicity: Various kinds of shocks already included in victims and damages indicators.
Share of population living in low elevated coastal zones ***&*** ***Share of population living in dry lands***	Those indicators serve as important drivers of ecosystem pressure, and it also quantifies an important component of vulnerability to sea-level rise and other coastal hazards as well as to aridity related issues.	· For those countries for which a high share of the population is concentrated in low-elevated coastal zones due to the country's natural topography (for example a number of Small Island States) the indicator would be largely structural. · For other countries, an increasing share could be argued to be due to policy choices or lack thereof. A similar reasoning could be applied to aridity.

Indicator name	Suggested / Possible rationale	Reason for exclusion
		· Share of land instead of population was selected instead.
Share of population living in seismic zones	Similar to the share of population living in hazard prone zones, this indicator reflects the degree to which the population could be impacted by earthquakes.	· Vulnerability to earthquakes is already captured by victims and damages due to natural hazards.
Ratio of coastal areas over the total landmass, % of coastal areas over the total landmass	Countries with higher share of land exposed to pressures related to climate change are more at risk of disruption of their sustainable development	· Simplicity: Not all natural hazards are related to or happened near coastal areas (earthquake, draught, etc.). This suggestion would limit the universality of the related concept. · Correlation with share of LECZ is likely.
Ratio of arable land over the total landmass, % of arable land over the total landmass	Countries with higher share of land exposed to pressures related to climate change are more at risk of disruption of their sustainable development	· Crop land which is a better measure than arable land according to the FAO is already included as part of environmental resilience.
Social Vulnerability		
Number of epidemics	The number of epidemics can reflect two dimensions of vulnerability – 1/ the frequency of or propensity for epidemic events over a specified time, and 2/ the likely compounding influence of epidemic events on countries of a series of epidemics in short succession.	· The concept of "Exposure to global health shocks" is already captured by the number of victims.
Share of mortality due to non-communicable diseases	This indicator measures the proportion of total death associated with non-communicable diseases – obesity, hypertension, diabetes, etc. – and reflects the quality of a country's human capital base.	· The debate on whether NCDs are the result of nature or nurture is ongoing with evidence suggesting that they are part 'nature' and part 'nurture'.

Indicator name	Suggested / Possible rationale	Reason for exclusion
		· Not a structural factor of exposure to shocks nor a shock variable per se. · General health level already considered as part of structural social resilience.
Deaths due to internal armed conflict	Internal armed conflict represents a key aspect of social instability.	· Difficult to argue it is an external shock. · More related to fragility than to vulnerability
Forcibly displaced persons per capita	Forcibly displaced persons per capita can reflect vulnerability between societal groups as well as the impact from other stresses – natural or other – on countries both within and between borders.	· Internally displaced people (IDP) were ultimately not included because they are either displaced due to endogenous shocks (internal violence) or shocks already well captured (natural hazards).
Terrorism (number of incidents, deaths or victims) either local or regional	Terrorism is one of the main expressions of fragility in many countries.	· Non-UN data. · Acceptability concerns: Difficult to get a consensus on indicator and definition. · Local terrorism as other similar types of social shocks are mostly endogenous.
Malaria deaths, per 1,000 population at risk	Malaria is endemic in many countries around the world, especially in tropical and sub-tropical areas, and malaria incidence is considered as a permanent feature of humid and hot countries. High morbidity and mortality rates can impact quality of life and production possibilities of countries. Conversely, lower or absent rates of malaria incidence can improve the quality and quantity of life and productivity.	· Simplicity: Malaria is already included in the indicator victims of epidemics.
Economic Resilience		

Indicator name	Suggested / Possible rationale	Reason for exclusion
Total reserves (in months of imports), long-term average	Fixed exchange rate regime countries with a low level of foreign exchange reserves are more susceptible to a speculative attack whereby investors rapidly sell domestic currency for foreign currency with the expectation that this will force a devaluation in the exchange rate. This vulnerability is also intrinsically linked to countries with high external debt levels given their obligation to service repayments in foreign currencies.	· Irrelevant for countries with established floating exchange rate regimes and prominence of non-structural factors. For example, the USA has a long-term average of only 1.5 months of import cover. · Further, given the reserve ratio is a key component of debt sustainability analysis undertaken by the IMF and IFIs, this indicator would confound allocative decisions and present contradicting incentives. · Too many missing values
Manufacturing value added (% of GDP)	The manufacturing sector is posited to be less vulnerable to exogenous environmental shocks as the agricultural sector. Therefore, a larger manufacturing sector as a proportion of gross domestic product may reduce the overall macroeconomic effect arising from a natural hazard.	· Conflicting evidence that the relative contribution of the manufacturing sector strengthens or weakens overall economic resilience. · While the manufacturing sector may be more resilient than the agricultural sector to environmental shocks and the service sector to austerity policies, it appears to be relatively less resilient to exogenous effects from global economic slowdowns. · Replaced by an indicator of sectoral diversification.
Roads, paved (% of total roads)	Paving roads is posited to reduce economic vulnerability to exogenous environmental shocks due to their resistance to heavy rain and flooding when compared with unpaved roads. More generally, better infrastructure development is linked to more resilient infrastructures.	· Significant data issue. · Weak relationship with the overall concept of the quality of the stock of public capital. Limited empirical evidence that associates the percentage of roads paved with economic resilience and prominence of non-structural factors.

Indicator name	Suggested / Possible rationale	Reason for exclusion
Access to electricity (% of population)	Access to electricity could be posited to support economic resilience both by supporting the implementation of recovery efforts and enabling business continuity following a natural hazard.	· Too many missing values. · Weak relationship with the overall concept of the quality of the stock of public capital. · Questionable structural indicator.
Mobile (or Fixed) broadband subscriptions per 100 inhabitants	Mobile broadband subscriptions could be posited to support economic resilience both by supporting the implementation of recovery efforts and enabling business continuity following a natural hazard.	· Weak relationship with the overall concept of the quality of the stock of public capital. · Questionable structural indicator. · Other communication related indicators have significant missing data issues.
Ship connectivity	The more remote a country is and the less connected it is to global shipping networks, then the higher are the transport costs it is likely to incur.	· Simplicity: Remoteness is already included · Universality: This indicator doesn't reflect issues of landlocked countries.
CIF/FOB ratio	The indicator reflects the cost associated with the remoteness from global markets.	· Simplicity: Remoteness is already included
Land area	There are some structural dynamics of countries that are threshold questions for viability – largely relating to population size, landmass (and landmass compared to EEZ, number of land masses, etc.) that significantly impact state viability and should be accounted for.	· Simplicity: Size is already captured by population
(Low) External Debt (% of GNI)	The accumulation of debt as a result of frequent and significant shocks linked to the global market, climate change, pandemic, natural hazard or extreme weather events weakens the resilience of nations, especially low-income developing countries	· Too many missing values. · In countries with an open capital account, currency and maturity mismatches are the real source of vulnerabilities. Countries which, like the United States, have a large stock of

Indicator name	Suggested / Possible rationale	Reason for exclusion
	and small open economies, and further increases their vulnerability.	long-term domestic currency external debt are less vulnerable to financial crises than countries which have a large stock of foreign currency or short-term domestic debt. In that sense, external debt stock might not be the appropriate indicator compared to external debt service.
(Low) Central Government Debt (% of GDP)	The accumulation of debt as a result of frequent and significant shocks linked to the global market, climate change, pandemic, natural hazard or extreme weather events weakens the resilience of nations, especially low-income developing countries and small open economies, and further increases their vulnerability.	· Non-structural, if debt accumulation is the result of both endogenous and exogenous factors. · Like other available debt-related indicators, this particular indicator is not exempt from significant data issues related to measurement errors and lack of comparability, such as SOEs debt, non-Paris Club debt, incompatible standards and definitions, etc.
Credit worthiness	Indicates access to and affordability of wider finance.	· Non-structural · Too many missing values.
Government revenue per capita	Provides alternative finance to respond to shocks. This indicator also offers a limited insight into state capacity	· Non-structural · Too many missing values.
Budget Execution	relates to the underlying ability of the public service to implement and deliver	· Non-structural · Too many missing values.
(low) Savings (% of GDP)	Households and firms with more savings and assets are resilient to shocks.	· Too many missing values.

Indicator name	Suggested / Possible rationale	Reason for exclusion
(Low) Economic complexity index (Harvard)	Economic diversification reduces the total macroeconomic risk by pooling risks across sectors.	· Too many missing values. · Would require including a sub-index.
Environmental Resilience		
Fishery resources per capita	As the main source of protein for many communities, fisheries is an important sector for development especially for coastal countries and island states. As well as playing a key role in food security, nutrition and, if done sustainably, biodiversity, fisheries also provide a source of livelihood for many households and provide a source of revenue for Governments through exports, manufacturing and fishing licenses.	· Questions around the universality of the indicators. Too many ocean related indicators would bias the index. · Sectoral specialization is already captured as part of economic resilience.
Issues of coastal erosion, increased acidification, deoxygenation and rising ocean temperatures, loss of biodiversity on sea and land, ocean pollution ***(no specific variables identified)***	Ocean related stressors linked to environmental degradation and climate change represent significant challenges for many SIDS.	· Too many missing values. · Concerns related to simplicity and universality criteria: · The MVI has to be universal but also has to remain simple. It implies to capture a wide range of specific concerns through the limited use of broad indicators. · Including too many highly specific components would reduce the relative significance of the information provided by each of them.
Biodiversity (stock - no specific variable identified)	Stronger biodiversity leads to higher resilience to climate change.	· Too many missing values. · Issue with the structural nature of the concept. · Possible moral hazard questions.

Indicator name	Suggested / Possible rationale	Reason for exclusion
		· No available indicator approaches biodiversity resilience in a roundabout way · Would likely require using an index within the index.
Social Resilience		
Expected years of schooling ***&*** ***Life expectancy at birth***	Higher human capital allows for the development of better adaptation strategies to external stressors.	· Mean years of schooling and Under-5 mortality indicators were preferred. · Indicators excluded to avoid redundancies.
Health Expenditure % of GDP	The human impacts of climate change and hazards are increasingly health-related. A strong public health system is a function of structural resilience, since more of the population would have access. Robust health sectors have more adaptive capacity, since they are more likely to better-respond to hazards and the human impacts of climate change without reliance on external support.	· correlated with income per capita · correlated with the sanitation indicator. · Non-structural: Budgetary allocation and priorities might be difficult to see as structural.
Number of school (per capita)	Number of schools per capita may be indicative of the quality of education.	· Limited evidence that the number of schools per capita affects resilience ceteris paribus.
Women participation in the workforce	Higher participation of women in the workforce can contribute to economic growth, a more equal and sustainable society, and greater resilience through a more efficient use of human capital.	· A better indicator was found and included. · Universality issues: Doubts whether this indicator can reflect a consistent rationale across income groups.
Unemployment (Total unemployment as	A high unemployment rate is a factor of social pressure that can	· Not a structural factor. · Significant data issues.

Indicator name	Suggested / Possible rationale	Reason for exclusion
percentage of total labor force)	lead to socio-economic consequences.	
Gender parity index for gross secondary school enrolment	Greater parity index for gross secondary school enrolment can contribute to economic growth, a more equal and sustainable society, and greater resilience through a more efficient use of human capital.	· Too many missing values.
Prevalence of lifetime physical and/or sexual intimate partner violence (IPV) or non-partner sexual violence (NPSV) or both among all women aged 15–49 years	Greater gender equity can contribute to economic growth through more effective use of the skills of the whole population, and when risks materialize, supports recovery and effective adaptation to long term stressors.	· Too many missing values.
Proportion of people with ownership or secure rights over agricultural land (out of total agricultural population) », Percent (%) of individuals	Greater gender equity can contribute to economic growth through more effective use of the skills of the whole population, and when risks materialize, supports recovery and effective adaptation to long term stressors.	· Too many missing values. · Reflects an institutional/policy aspect rather than a structural factor.
Maternal mortality ratio", Maternal deaths per 100,000 live births	Greater gender equity can contribute to economic growth through more effective use of the skills of the whole population, and when risks materialize, supports recovery and effective adaptation to long term stressors.	· Too many missing values. · Factors reflecting general health are already captured by Under 5 mortality which should be highly correlated with maternal mortality
Participation rate in formal and non-formal education and training, by sex	Greater gender equity can contribute to economic growth through more effective use of the skills of the whole population, and	· Too many missing values.

Indicator name	Suggested / Possible rationale	Reason for exclusion
	when risks materialize, supports recovery and effective adaptation to long term stressors.	
Poverty rate	The poorest are the more exposed to the adverse effects of shocks and are less able to flexibly adjust to shocks and stressors	· The MVI is not a development index and shouldn't include variables too strongly correlated with GNI pc.
Household savings in $USD per capita	enables individuals to respond to crisis.	· Too many missing values.
Access to insurance	enables individuals to respond to crisis.	· Too many missing values. · Not a structural factor.
Racial and ethnic equity	Greater equity can contribute to economic growth through more effective use of the skills of the whole population, and when risks materialize, supports recovery and effective adaptation to long term stressors.	· Too many missing values.
(Low) Income inequality – GINI	Lower income inequality is crucial to resilience	· Too many missing values.

ANNEX 2: Country-level results

MVI and its pillars

Country	ISO	MVI - Score	Structural Vulnerability Index	Lack of Structural Resilience Index
Afghanistan	AFG	**54.9**	**47.8**	**61.2**
Angola	AGO	**47.5**	**44.4**	**50.4**
United Arab Emirates	ARE	**54.4**	**43.3**	**63.6**
Argentina	ARG	**41.9**	**32.3**	**49.7**
Armenia	ARM	**49.4**	**46.7**	**52.0**
Antigua and Barbuda	ATG	**61.7**	**63.4**	**59.9**
Azerbaijan	AZE	**46.9**	**41.4**	**51.8**
Burundi	BDI	**61.7**	**55.6**	**67.3**
Benin	BEN	**49.6**	**39.6**	**57.9**
Burkina Faso	BFA	**58.1**	**51.1**	**64.4**
Bangladesh	BGD	**52.4**	**47.2**	**57.1**
Bahrain	BHR	**60.4**	**45.3**	**72.5**
Bahamas	BHS	**59.9**	**56.4**	**63.1**
Belize	BLZ	**53.0**	**55.6**	**50.3**
Bolivia (Plurinational State of)	BOL	**41.6**	**37.1**	**45.8**
Brazil	BRA	**41.1**	**32.8**	**48.1**
Barbados	BRB	**57.9**	**46.2**	**67.6**
Brunei Darussalam	BRN	**52.9**	**48.4**	**57.0**
Bhutan	BTN	**41.8**	**34.5**	**48.1**
Botswana	BWA	**64.2**	**62.5**	**65.9**
Central African Republic	CAF	**52.0**	**46.6**	**56.9**
Chile	CHL	**48.4**	**38.6**	**56.6**
China	CHN	**46.1**	**45.7**	**46.5**
Côte D'Ivoire	CIV	**42.6**	**32.9**	**50.4**
Cameroon	CMR	**44.8**	**47.4**	**42.0**
Democratic Republic of the Congo	COD	**54.6**	**53.8**	**55.3**
Congo	COG	**60.0**	**65.3**	**54.2**
Colombia	COL	**40.4**	**36.4**	**44.1**
Comoros	COM	**60.3**	**53.9**	**66.0**
Cabo Verde	CPV	**60.5**	**62.5**	**58.4**
Costa Rica	CRI	**46.5**	**46.4**	**46.6**
Cuba	CUB	**46.6**	**51.8**	**40.7**
Djibouti	DJI	**70.8**	**73.8**	**67.6**
Dominica	DMA	**55.4**	**62.4**	**47.3**
Dominican Republic	DOM	**45.1**	**43.1**	**47.0**
Algeria	DZA	**53.3**	**55.9**	**50.5**
Ecuador	ECU	**45.5**	**49.2**	**41.5**
Egypt	EGY	**58.5**	**50.2**	**65.9**
Eritrea	ERI	**63.2**	**63.4**	**63.1**
Ethiopia	ETH	**55.2**	**54.5**	**55.9**
Fiji	FJI	**51.7**	**50.2**	**53.2**
Micronesia (Federated States of)	FSM	**64.0**	**56.4**	**70.8**
Gabon	GAB	**42.5**	**37.9**	**46.6**
Georgia	GEO	**38.6**	**29.1**	**46.2**
Ghana	GHA	**44.1**	**33.0**	**53.0**
Guinea	GIN	**47.7**	**45.4**	**49.8**

Country	ISO	MVI - Score	Structural Vulnerability Index	Lack of Structural Resilience Index
Gambia	GMB	**59.1**	**56.8**	**61.3**
Guinea-Bissau	GNB	**58.8**	**60.4**	**57.0**
Equatorial Guinea	GNQ	**52.2**	**52.6**	**51.8**
Grenada	GRD	**61.7**	**65.3**	**57.8**
Guatemala	GTM	**44.7**	**34.0**	**53.4**
Guyana	GUY	**46.4**	**55.1**	**35.8**
Honduras	HND	**48.2**	**50.8**	**45.5**
Haiti	HTI	**65.6**	**68.0**	**63.0**
Indonesia	IDN	**32.1**	**20.6**	**40.5**
India	IND	**46.0**	**31.2**	**57.1**
Iran (Islamic Republic of)	IRN	**55.7**	**56.9**	**54.4**
Iraq	IRQ	**60.7**	**64.2**	**56.9**
Jamaica	JAM	**49.6**	**48.1**	**51.0**
Jordan	JOR	**60.6**	**56.9**	**64.0**
Kazakhstan	KAZ	**43.0**	**38.6**	**47.0**
Kenya	KEN	**57.0**	**54.1**	**59.7**
Kyrgyzstan	KGZ	**43.5**	**35.1**	**50.6**
Cambodia	KHM	**49.0**	**53.2**	**44.3**
Kiribati	KIR	**59.8**	**48.8**	**69.1**
Saint Kitts and Nevis	KNA	**55.0**	**52.4**	**57.5**
Kuwait	KWT	**64.0**	**51.7**	**74.3**
Lao PDR	LAO	**43.8**	**46.3**	**41.2**
Lebanon	LBN	**62.6**	**56.0**	**68.5**
Liberia	LBR	**61.8**	**65.6**	**57.7**
Libya	LBY	**61.7**	**63.8**	**59.4**
Saint Lucia	LCA	**66.5**	**73.2**	**59.1**
Sri Lanka	LKA	**48.6**	**44.8**	**52.1**
Lesotho	LSO	**62.4**	**57.9**	**66.6**
Morocco	MAR	**43.0**	**35.0**	**49.7**
Madagascar	MDG	**49.6**	**39.4**	**58.0**
Maldives	MDV	**72.2**	**70.4**	**74.0**
Mexico	MEX	**42.0**	**39.7**	**44.2**
Marshall Islands	MHL	**58.9**	**45.1**	**70.0**
Mali	MLI	**56.4**	**48.2**	**63.6**
Myanmar	MMR	**39.3**	**36.7**	**41.7**
Mongolia	MNG	**49.9**	**50.1**	**49.6**
Mozambique	MOZ	**47.5**	**44.7**	**50.2**
Mauritania	MRT	**67.7**	**71.2**	**64.0**
Mauritius	MUS	**52.2**	**38.6**	**62.9**
Malawi	MWI	**53.7**	**42.7**	**62.8**
Malaysia	MYS	**39.4**	**39.4**	**39.4**
Namibia	NAM	**58.4**	**60.7**	**56.0**
Niger	NER	**64.3**	**63.4**	**65.3**
Nigeria	NGA	**53.1**	**44.6**	**60.4**
Nicaragua	NIC	**45.9**	**50.5**	**40.7**
Nepal	NPL	**45.7**	**43.6**	**47.7**
Nauru	NRU	**68.7**	**58.2**	**77.7**
Oman	OMN	**59.8**	**51.7**	**67.0**
Pakistan	PAK	**59.9**	**58.4**	**61.4**
Panama	PAN	**40.2**	**35.6**	**44.4**
Peru	PER	**39.1**	**32.4**	**44.8**
Philippines	PHL	**43.6**	**40.8**	**46.3**
Palau	PLW	**57.0**	**53.7**	**60.2**
Papua New Guinea	PNG	**47.1**	**26.6**	**61.0**
Democratic People's Republic of Korea	PRK	**41.0**	**33.9**	**47.0**

Country	ISO	MVI - Score	Structural Vulnerability Index	Lack of Structural Resilience Index
Paraguay	PRY	**49.9**	**49.2**	**50.5**
Qatar	QAT	**58.1**	**42.6**	**70.3**
Rwanda	RWA	**54.4**	**46.3**	**61.5**
Saudi Arabia	SAU	**55.2**	**50.9**	**59.3**
Sudan	SDN	**62.8**	**67.1**	**58.3**
Senegal	SEN	**46.3**	**41.0**	**51.1**
Singapore	SGP	**52.4**	**39.8**	**62.5**
Solomon Islands	SLB	**55.9**	**50.2**	**61.0**
Sierra Leone	SLE	**54.9**	**50.8**	**58.7**
El Salvador	SLV	**52.7**	**53.4**	**52.1**
Somalia	SOM	**67.8**	**62.6**	**72.5**
South Sudan	SSD	**67.3**	**72.8**	**61.3**
Sao Tome and Principe	STP	**53.5**	**55.2**	**51.6**
Suriname	SUR	**43.2**	**42.2**	**44.1**
Eswatini	SWZ	**57.3**	**49.0**	**64.5**
Seychelles	SYC	**54.5**	**47.2**	**61.0**
Syrian Arab Republic	SYR	**57.5**	**59.1**	**55.9**
Chad	TCD	**69.4**	**73.8**	**64.6**
Togo	TGO	**44.1**	**34.2**	**52.2**
Thailand	THA	**43.1**	**43.9**	**42.4**
Tajikistan	TJK	**51.7**	**48.6**	**54.5**
Turkmenistan	TKM	**51.9**	**51.6**	**52.2**
Timor-Leste	TLS	**46.4**	**43.3**	**49.3**
Tonga	TON	**57.0**	**49.6**	**63.6**
Trinidad and Tobago	TTO	**50.3**	**47.7**	**52.7**
Tunisia	TUN	**45.5**	**42.9**	**47.9**
Turkey	TUR	**46.5**	**49.8**	**43.0**
Tuvalu	TUV	**64.3**	**48.3**	**77.0**
United Republic of Tanzania	TZA	**41.6**	**35.8**	**46.6**
Uganda	UGA	**54.5**	**52.4**	**56.5**
Uruguay	URY	**44.7**	**30.7**	**55.3**
Uzbekistan	UZB	**49.2**	**42.5**	**55.0**
Saint Vincent and the Grenadines	VCT	**61.8**	**65.1**	**58.2**
Venezuela (Bolivarian Republic of)	VEN	**48.4**	**49.2**	**47.7**
Viet Nam	VNM	**42.3**	**41.2**	**43.4**
Vanuatu	VUT	**54.4**	**51.2**	**57.4**
Samoa	WSM	**62.5**	**57.2**	**67.3**
Yemen	YEM	**72.9**	**73.9**	**71.8**
South Africa	ZAF	**48.1**	**40.4**	**54.7**
Zambia	ZMB	**48.6**	**41.6**	**54.8**
Zimbabwe	ZWE	**58.1**	**60.0**	**56.1**
	Mean	52.9	49.2	55.8
	Median	52.8	48.9	55.9
	SD	8.4	10.9	8.9

Structural vulnerability index: concepts and individual indicators

Country	**ISO**	**Eco. vul.**	**Cpt #1**	*Ind #1*	**Cpt #2**	*Ind #2*	**Cpt #3**	*Ind #3*	**Env. vul.**	**Cpt #4**	*Ind #4*	*Ind #5*	**Cpt #5**	*Ind #6*	*Ind #7*	**Cpt #6**	*Ind #8*	*Ind #9*	**Soc. vul.**	**Cpt #7**	*Ind #10*	**Cpt #8**	*Ind #11*	*Ind #12*	**Cpt #9**	*Ind #13*
Afghanistan	AFG	55.8	62.6	62.6	61.1	61.1	41.2	41.2	52.8	26.5	36.8	7.3	60.2	85.1	0.0	63.4	0.0	89.7	31.0	6.2	6.2	13.1	13.9	12.2	51.7	51.7
Angola	AGO	61.0	100.0	100.0	31.2	31.2	13.3	13.3	35.6	10.3	14.6	0.0	55.8	57.5	54.2	23.8	0.2	33.7	30.7	37.3	37.3	34.8	23.3	43.3	14.9	14.9
Un. Arab Em.	ARE	34.3	20.2	20.2	16.7	16.7	53.2	53.2	61.6	0.0	0.0	0.0	79.7	92.2	64.7	70.9	7.4	100.0	25.9	0.0	0.0	44.8	63.3	3.0	1.6	1.6
Argentina	ARG	23.8	36.0	36.0	20.0	20.0	1.6	1.6	43.6	6.8	2.5	9.3	55.8	78.9	0.0	50.3	1.6	71.2	25.9	22.0	22.0	39.0	0.0	55.2	1.4	1.4
Armenia	ARM	39.0	21.8	21.8	48.8	48.8	41.4	41.4	40.5	3.2	2.3	3.9	56.5	79.9	0.0	41.4	0.0	58.6	58.1	0.0	0.0	11.2	12.1	10.2	100.0	100.0
Antig. & Barb.	ATG	70.1	97.7	97.7	54.2	54.2	47.5	47.5	74.0	72.9	24.9	100.0	74.8	77.8	71.8	74.3	32.4	100.0	40.8	0.0	0.0	70.7	0.0	100.0	1.8	1.8
Azerbaijan	AZE	55.2	81.5	81.5	47.0	47.0	17.0	17.0	45.0	2.0	1.0	2.7	55.4	78.4	0.0	54.7	0.0	77.4	8.3	0.0	0.0	14.2	9.9	17.4	2.3	2.3
Burundi	BDI	62.1	77.3	77.3	70.3	70.3	25.7	25.7	45.5	16.3	22.9	3.2	77.2	83.1	70.7	0.0	0.0	0.0	57.9	5.1	5.1	24.1	26.6	21.4	97.1	97.1
Benin	BEN	48.8	48.4	48.4	48.1	48.1	49.9	49.9	43.3	6.2	8.8	0.0	67.8	57.7	76.6	31.5	1.7	44.6	21.0	8.5	8.5	35.3	31.5	38.7	2.1	2.1
Burkina Faso	BFA	52.0	77.0	77.0	29.8	29.8	36.3	36.3	60.7	28.9	38.5	13.6	79.7	70.1	88.2	62.3	0.0	88.1	38.1	50.6	50.6	32.2	29.8	34.5	27.4	27.4
Bangladesh	BGD	53.6	87.9	87.9	22.8	22.8	19.1	19.1	49.1	48.7	52.5	44.5	60.2	10.7	84.4	35.3	50.0	0.0	37.4	26.5	26.5	15.9	20.2	9.7	57.0	57.0
Bahrain	BHR	44.0	48.9	48.9	24.6	24.6	52.9	52.9	49.8	0.0	0.0	0.0	76.2	92.9	54.8	40.2	56.9	0.0	41.7	0.0	0.0	72.2	100.0	20.5	3.2	3.2
Bahamas	BHS	55.0	80.2	80.2	38.1	38.1	34.3	34.3	69.7	71.1	9.9	100.0	65.5	72.4	57.7	72.5	100.0	22.7	40.8	0.0	0.0	70.7	0.0	100.0	0.6	0.6
Belize	BLZ	60.5	67.7	67.7	37.7	37.7	70.6	70.6	62.9	75.0	35.3	100.0	77.8	92.2	60.2	13.4	18.9	0.0	40.8	0.0	0.0	70.7	0.0	100.0	0.9	0.9
Bolivia	BOL	27.0	39.0	39.0	20.8	20.8	15.5	15.5	43.4	37.3	27.8	44.8	57.4	68.8	43.1	31.2	0.0	44.1	38.9	56.5	56.5	36.6	0.0	51.8	1.3	1.3
Brazil	BRA	17.8	28.0	28.0	12.3	12.3	3.9	3.9	34.2	12.6	16.5	6.6	57.2	52.6	61.4	8.9	2.4	12.4	41.8	43.7	43.7	57.6	0.0	81.5	1.4	1.4
Barbados	BRB	49.1	67.0	67.0	19.4	19.4	48.6	48.6	48.4	1.1	1.3	0.9	83.7	94.3	71.6	2.4	3.4	0.0	40.8	0.0	0.0	70.7	0.0	100.0	0.0	0.0
Brunei Darus.	BRN	71.6	90.0	90.0	13.5	13.5	84.2	84.2	43.6	0.0	0.0	0.0	75.3	80.5	69.7	5.1	7.2	0.0	3.4	0.0	0.0	5.9	0.1	8.4	0.0	0.0
Bhutan	BTN	48.8	48.8	48.8	46.7	46.7	50.8	50.8	34.2	1.3	1.9	0.0	58.6	67.3	48.4	7.8	0.0	11.0	3.9	0.0	0.0	6.8	0.6	9.5	0.0	0.0
Botswana	BWA	64.1	86.2	86.2	57.7	57.7	39.6	39.6	52.9	1.8	1.8	1.9	58.3	74.5	35.1	70.7	0.0	100.0	69.3	100.0	100.0	64.3	2.3	90.9	16.4	16.4
Central Af. Rep.	CAF	55.1	73.8	73.8	54.1	54.1	26.7	26.7	33.8	1.9	2.7	0.0	58.4	51.7	64.3	4.9	0.0	6.9	48.3	16.1	16.1	73.3	100.0	27.1	37.2	37.2
Chile	CHL	38.6	61.9	61.9	7.7	7.7	24.2	24.2	53.4	71.9	18.2	100.0	53.2	69.2	29.5	23.7	1.4	33.5	10.7	0.0	0.0	18.5	0.0	26.1	1.8	1.8
China	CHN	39.8	65.3	65.3	15.6	15.6	16.1	16.1	54.1	65.5	83.9	39.3	55.5	78.5	3.6	37.3	2.0	52.7	41.7	0.1	0.1	72.2	100.0	20.7	3.8	3.8
Côte D'Ivoire	CIV	40.2	59.2	59.2	22.9	22.9	28.8	28.8	36.1	0.2	0.2	0.0	62.5	41.8	77.8	0.5	0.7	0.0	18.0	2.2	2.2	31.1	32.5	29.6	1.6	1.6
Cameroon	CMR	19.2	23.7	23.7	13.4	13.4	19.1	19.1	32.4	0.9	1.2	0.0	55.5	47.5	62.5	8.8	0.3	12.5	72.9	10.6	10.6	76.3	100.0	40.7	100.0	100.0
Dem. R. Congo	COD	61.2	91.6	91.6	51.9	51.9	11.8	11.8	31.8	1.0	1.1	0.9	55.1	50.2	59.6	0.6	0.0	0.8	62.7	20.1	20.1	75.6	100.0	37.7	75.3	75.3

Country	**ISO**	**Eco. vul.**	**Cpt #1**	*Ind #1*	**Cpt #2**	*Ind #2*	**Cpt #3**	*Ind #3*	**Env. vul.**	**Cpt #4**	*Ind #4*	*Ind #5*	**Cpt #5**	*Ind #6*	*Ind #7*	**Cpt #6**	*Ind #8*	*Ind #9*	**Soc. vul.**	**Cpt #7**	*Ind #10*	**Cpt #8**	*Ind #11*	*Ind #12*	**Cpt #9**	*Ind #13*
Congo	COG	55.2	83.5	83.5	32.1	32.1	33.7	33.7	34.8	3.6	5.1	0.0	60.2	57.5	62.7	0.0	0.1	0.0	92.4	100.0	100.0	74.9	100.0	35.1	100.0	100.0
Colombia	COL	22.3	34.9	34.9	14.1	14.1	8.7	8.7	28.9	13.1	15.7	9.6	48.4	33.4	59.7	1.5	1.4	1.6	51.3	53.8	53.8	70.7	0.0	100.0	0.1	0.1
Comoros	COM	51.8	75.8	75.8	42.8	42.8	21.9	21.9	50.6	46.1	65.1	3.8	74.4	91.2	52.5	2.1	2.9	0.0	58.9	100.0	100.0	20.6	8.2	27.9	0.0	0.0
Cabo Verde	CPV	73.6	82.0	82.0	68.3	68.3	69.8	69.8	54.4	11.5	16.3	0.4	63.8	76.8	47.4	68.3	5.8	96.5	57.8	100.0	100.0	4.3	2.1	5.7	0.0	0.0
Costa Rica	CRI	27.0	40.7	40.7	13.4	13.4	18.9	18.9	40.3	9.5	11.1	7.6	69.0	82.0	52.9	3.4	4.9	0.0	64.0	100.0	100.0	29.9	0.0	42.2	37.4	37.4
Cuba	CUB	41.2	66.2	66.2	25.0	25.0	8.9	8.9	68.4	100.0	100.0	100.0	62.0	64.8	59.0	14.2	20.1	0.5	40.8	0.0	0.0	70.7	0.0	100.0	0.5	0.5
Djibouti	DJI	71.1	8.2	8.2	71.5	71.5	100.0	100.0	72.0	66.2	93.6	0.0	78.6	82.7	74.2	70.7	1.4	100.0	78.1	47.0	47.0	78.0	100.0	46.5	100.0	100.0
Dominica	DMA	66.9	91.0	91.0	51.1	51.1	50.5	50.5	74.5	99.8	99.6	100.0	81.7	91.0	71.3	0.7	1.0	0.0	40.8	0.0	0.0	70.7	0.0	100.0	0.0	0.0
Dominican Rep.	DOM	28.7	25.0	25.0	31.3	31.3	29.4	29.4	29.2	17.5	21.5	12.1	47.4	37.0	55.9	3.7	4.3	2.9	62.4	85.2	85.2	66.6	0.0	94.2	0.8	0.8
Algeria	DZA	58.1	96.7	96.7	12.5	12.5	24.6	24.6	60.3	30.2	1.3	42.7	71.7	91.8	43.2	69.6	0.0	98.5	48.7	0.0	0.0	74.0	100.0	30.7	40.5	40.5
Ecuador	ECU	43.9	71.6	71.6	11.5	11.5	23.1	23.1	28.6	18.0	10.9	23.0	45.3	40.8	49.3	8.6	3.1	11.8	67.3	23.9	23.9	54.9	0.0	77.6	100.0	100.0
Egypt	EGY	42.8	6.9	6.9	71.8	71.8	17.1	17.1	58.2	0.2	0.0	0.3	71.8	93.5	39.5	70.7	2.4	99.9	48.4	0.0	0.0	73.2	100.0	27.0	40.6	40.6
Eritrea	ERI	84.7	86.7	86.7	100.0	100.0	63.2	63.2	60.8	25.9	36.7	0.0	73.6	80.4	66.1	70.7	2.5	99.9	34.5	0.0	0.0	58.8	77.6	29.8	11.2	11.2
Ethiopia	ETH	41.8	56.0	56.0	44.3	44.3	12.0	12.0	43.5	27.9	37.0	13.8	53.7	61.7	44.4	44.7	0.0	63.2	72.7	4.1	4.1	76.4	100.0	40.7	100.0	100.0
Fiji	FJI	49.4	30.7	30.7	51.5	51.5	61.0	61.0	70.5	92.5	84.4	100.0	79.4	87.3	70.6	6.2	8.7	0.0	11.8	0.0	0.0	20.5	0.0	29.0	0.1	0.1
Micronesia FS	FSM	75.8	95.5	95.5	41.6	41.6	80.0	80.0	60.0	66.9	92.0	22.4	77.8	77.3	78.4	16.0	22.6	0.0	13.9	0.0	0.0	24.1	0.0	34.0	0.8	0.8
Gabon	GAB	54.3	87.7	87.7	16.0	16.0	29.9	29.9	33.9	2.2	3.1	0.0	58.7	57.3	60.0	1.2	1.8	0.0	14.7	4.1	4.1	23.6	29.0	16.6	8.5	8.5
Georgia	GEO	38.8	19.2	19.2	42.6	42.6	48.2	48.2	31.3	32.1	3.2	45.3	43.5	61.5	0.0	4.6	2.0	6.1	7.8	0.0	0.0	11.9	13.9	9.5	6.4	6.4
Ghana	GHA	38.2	50.4	50.4	40.2	40.2	14.9	14.9	37.4	3.5	4.9	0.1	64.1	48.3	76.8	7.7	0.9	10.9	20.1	21.2	21.2	26.2	15.2	33.8	8.9	8.9
Guinea	GIN	66.9	84.4	84.4	72.3	72.3	33.0	33.0	36.8	2.2	3.1	0.0	63.6	37.4	81.8	1.7	2.0	1.1	18.7	12.0	12.0	28.2	28.2	28.2	10.3	10.3
Gambia	GMB	73.9	61.0	61.0	100.0	100.0	51.4	51.4	54.4	14.6	20.6	0.0	65.1	50.1	77.2	66.5	24.3	90.9	35.8	0.0	0.0	4.3	2.1	5.7	61.8	61.8
Guinea-Bissau	GNB	65.3	92.2	92.2	54.7	54.7	36.2	36.2	40.9	6.9	9.7	0.0	68.6	38.0	89.3	15.9	22.5	0.0	70.9	100.0	100.0	17.9	4.1	25.0	68.9	68.9
Equat. Guinea	GNQ	59.8	98.8	98.8	24.2	24.2	19.7	19.7	42.6	0.0	0.0	0.0	73.7	86.8	57.7	0.4	0.5	0.0	53.9	89.4	89.4	27.3	35.1	15.9	0.0	0.0
Grenada	GRD	87.4	94.2	94.2	100.0	100.0	63.6	63.6	59.2	75.6	37.9	100.0	69.0	67.8	70.3	3.8	5.3	0.0	40.8	0.0	0.0	70.7	0.0	100.0	0.0	0.0
Guatemala	GTM	21.4	25.4	25.4	7.6	7.6	25.9	25.9	35.5	49.4	57.5	39.7	36.6	13.5	50.0	1.4	2.0	0.0	41.7	15.1	15.1	70.7	0.0	100.0	0.3	0.3
Guyana	GUY	62.9	69.9	69.9	66.4	66.4	50.6	50.6	58.9	80.2	53.5	100.0	63.1	52.5	72.2	3.0	4.2	0.0	40.8	0.0	0.0	70.7	0.0	100.0	0.3	0.3
Honduras	HND	39.6	42.2	42.2	23.0	23.0	49.1	49.1	34.1	42.4	55.9	21.7	40.9	34.5	46.4	4.4	6.2	0.0	70.7	100.0	100.0	70.7	0.0	100.0	0.1	0.1
Haiti	HTI	72.7	76.1	76.1	93.4	93.4	36.7	36.7	70.5	90.4	79.6	100.0	81.9	100.0	58.3	4.8	3.7	5.7	60.2	100.0	100.0	29.7	0.0	42.0	0.0	0.0

Country	**ISO**	**Eco. vul.**	**Cpt #1**	*Ind #1*	**Cpt #2**	*Ind #2*	**Cpt #3**	*Ind #3*	**Env. vul.**	**Cpt #4**	*Ind #4*	*Ind #5*	**Cpt #5**	*Ind #6*	*Ind #7*	**Cpt #6**	*Ind #8*	*Ind #9*	**Soc. vul.**	**Cpt #7**	*Ind #10*	**Cpt #8**	*Ind #11*	*Ind #12*	**Cpt #9**	*Ind #13*
Indonesia	IDN	12.5	0.1	0.1	15.2	15.2	15.5	15.5	31.4	17.3	5.2	24.0	51.0	25.0	67.7	7.5	10.7	0.0	11.4	4.7	4.7	19.2	0.1	27.2	0.5	0.5
India	IND	21.8	24.1	24.1	18.4	18.4	22.6	22.6	48.6	47.1	54.8	37.8	60.0	67.1	51.8	35.7	3.0	50.4	8.5	0.4	0.4	14.5	18.3	9.4	2.5	2.5
Iran	IRN	40.9	57.4	57.4	40.5	40.5	8.7	8.7	54.1	12.9	11.2	14.5	61.8	87.4	0.0	69.3	1.5	98.0	71.6	0.0	0.0	73.3	100.0	27.3	100.0	100.0
Iraq	IRQ	65.4	97.0	97.0	48.7	48.7	32.6	32.6	55.4	0.3	0.4	0.3	64.5	88.2	23.3	71.0	9.2	100.0	70.9	6.7	6.7	71.0	100.0	8.5	100.0	100.0
Jamaica	JAM	51.6	63.8	63.8	27.6	27.6	56.2	56.2	58.2	58.8	20.5	80.6	81.8	93.8	67.7	4.6	6.5	0.0	29.8	6.8	6.8	51.1	0.0	72.3	0.1	0.1
Jordan	JOR	39.1	32.5	32.5	23.6	23.6	54.5	54.5	55.0	0.0	0.0	0.0	63.8	90.1	5.3	70.7	0.0	100.0	71.8	0.0	0.0	74.0	100.0	30.9	100.0	100.0
Kazakhstan	KAZ	39.5	64.7	64.7	19.5	19.5	10.3	10.3	53.8	1.0	0.8	1.1	61.7	87.2	0.0	70.0	0.0	98.9	4.4	0.0	0.0	7.7	0.6	10.8	0.6	0.6
Kenya	KEN	19.8	26.5	26.5	12.0	12.0	18.3	18.3	55.4	31.8	44.6	5.9	68.1	76.4	58.8	59.6	0.5	84.3	72.9	2.7	2.7	77.0	100.0	43.2	100.0	100.0
Kyrgyzstan	KGZ	38.9	27.7	27.7	33.0	33.0	51.7	51.7	46.1	18.1	25.5	1.9	58.6	82.8	0.0	51.3	0.0	72.5	7.2	0.0	0.0	12.2	1.2	17.1	2.6	2.6
Cambodia	KHM	55.9	67.3	67.3	20.6	20.6	66.4	66.4	54.1	57.1	57.5	56.7	73.7	59.2	85.8	10.1	14.3	0.0	49.5	83.7	83.7	18.3	4.0	25.6	0.0	0.0
Kiribati	KIR	66.7	70.6	70.6	69.5	69.5	59.3	59.3	50.3	0.8	1.1	0.0	53.3	46.9	59.0	68.9	97.4	0.0	12.8	0.0	0.0	22.2	0.0	31.3	0.0	0.0
St Kitts & Nevis	KNA	58.1	90.5	90.5	34.3	34.3	27.4	27.4	60.1	8.9	0.6	12.6	75.8	78.8	72.6	70.9	6.5	100.0	35.2	0.0	0.0	61.0	0.0	86.3	0.8	0.8
Kuwait	KWT	51.6	85.3	85.3	19.9	19.9	17.9	17.9	58.9	0.0	0.0	0.0	73.1	91.1	48.6	71.1	10.6	100.0	43.6	0.0	0.0	75.5	100.0	37.3	3.1	3.1
Lao PDR	LAO	24.8	19.8	19.8	18.3	18.3	33.4	33.4	49.1	28.6	34.5	21.2	80.1	82.9	77.1	0.0	0.0	0.0	58.2	100.0	100.0	13.3	13.2	13.5	0.0	0.0
Lebanon	LBN	43.6	47.8	47.8	40.3	40.3	42.2	42.2	50.0	7.4	10.5	0.0	49.3	69.8	0.0	70.7	0.9	100.0	70.8	0.0	0.0	71.0	100.0	9.2	100.0	100.0
Liberia	LBR	72.7	75.0	75.0	100.0	100.0	14.8	14.8	28.2	0.6	0.9	0.0	48.8	4.6	68.9	0.6	0.8	0.0	82.7	100.0	100.0	22.4	6.8	30.9	100.0	100.0
Libya	LBY	89.1	99.7	99.7	100.0	100.0	62.4	62.4	57.7	0.2	0.2	0.1	70.6	93.0	36.4	70.7	0.7	100.0	30.9	0.0	0.0	43.2	57.1	21.6	31.6	31.6
Saint Lucia	LCA	86.5	94.9	94.9	60.8	60.8	98.7	98.7	59.9	61.8	85.7	16.9	83.3	92.6	72.8	4.0	5.7	0.0	70.7	100.0	100.0	70.7	0.0	100.0	0.5	0.5
Sri Lanka	LKA	26.7	37.9	37.9	14.4	14.4	22.1	22.1	44.3	49.7	53.6	45.5	58.1	35.3	74.3	5.2	7.3	0.6	58.0	100.0	100.0	9.3	0.9	13.2	0.5	0.5
Lesotho	LSO	72.7	83.2	83.2	29.5	29.5	89.9	89.9	55.5	70.7	100.0	0.0	50.4	69.3	16.4	41.4	0.0	58.6	40.9	0.0	0.0	70.8	3.8	100.0	0.6	0.6
Morocco	MAR	28.8	13.0	13.0	15.3	15.3	45.7	45.7	53.2	8.1	5.1	10.3	58.5	82.8	0.0	70.7	0.3	100.0	4.2	0.0	0.0	7.0	8.1	5.6	1.9	1.9
Madagascar	MDG	51.0	33.7	33.7	75.0	75.0	32.3	32.3	40.1	54.6	28.7	71.7	41.6	37.1	45.7	11.0	2.9	15.4	21.1	25.2	25.2	26.5	5.5	37.1	0.0	0.0
Maldives	MDV	83.1	95.4	95.4	56.2	56.2	91.8	91.8	67.8	70.9	6.3	100.0	63.9	47.8	76.7	68.6	97.0	0.0	58.0	100.0	100.0	9.3	0.9	13.2	0.0	0.0
Mexico	MEX	32.9	51.9	51.9	16.5	16.5	17.0	17.0	44.5	19.0	8.2	25.6	56.2	74.9	26.4	49.2	4.5	69.4	40.8	0.0	0.0	70.7	0.0	100.0	1.7	1.7
Marshall Islands	MHL	58.6	90.6	90.6	45.8	45.8	1.9	1.9	50.4	25.7	32.5	16.2	53.4	0.0	75.5	64.2	90.9	0.0	10.7	0.0	0.0	18.5	0.0	26.2	0.0	0.0
Mali	MLI	52.8	77.3	77.3	33.9	33.9	35.4	35.4	62.3	32.6	46.1	0.0	79.5	84.0	74.9	65.2	0.0	92.2	17.4	2.1	2.1	22.4	13.9	28.4	20.2	20.2
Myanmar	MMR	39.8	41.5	41.5	43.2	43.2	34.3	34.3	48.7	63.2	8.4	88.9	55.7	49.9	61.0	5.4	7.6	0.0	8.8	0.0	0.0	15.2	3.9	21.1	0.0	0.0
Mongolia	MNG	55.9	73.3	73.3	27.8	27.8	56.7	56.7	66.5	52.0	73.3	6.3	77.8	88.6	65.4	67.1	0.0	94.8	1.2	0.0	0.0	2.0	0.0	2.8	0.0	0.0

Country	**ISO**	**Eco. vul.**	**Cpt #1**	*Ind #1*	**Cpt #2**	*Ind #2*	**Cpt #3**	*Ind #3*	**Env. vul.**	**Cpt #4**	*Ind #4*	*Ind #5*	**Cpt #5**	*Ind #6*	*Ind #7*	**Cpt #6**	*Ind #8*	*Ind #9*	**Soc. vul.**	**Cpt #7**	*Ind #10*	**Cpt #8**	*Ind #11*	*Ind #12*	**Cpt #9**	*Ind #13*
Mozambique	MOZ	43.4	45.8	45.8	33.0	33.0	49.6	49.6	55.1	69.7	38.8	90.6	54.7	63.6	44.1	35.3	3.6	49.8	32.7	17.5	17.5	53.8	2.1	76.0	3.0	3.0
Mauritania	MRT	70.1	82.4	82.4	55.6	55.6	69.8	69.8	73.8	70.7	100.0	0.2	79.6	90.5	67.0	70.7	1.4	100.0	69.6	58.2	58.2	33.7	39.6	26.6	100.0	100.0
Mauritius	MUS	44.6	34.5	34.5	37.1	37.1	58.2	58.2	24.6	4.3	1.6	5.9	42.1	29.3	51.8	5.4	7.6	0.0	43.3	0.0	0.0	75.1	100.0	35.6	0.2	0.2
Malawi	MWI	44.3	68.2	68.2	31.8	31.8	15.2	15.2	53.3	69.6	93.5	30.6	53.1	63.0	40.8	29.5	0.0	41.8	25.8	37.3	37.3	22.8	5.7	31.8	9.7	9.7
Malaysia	MYS	38.5	33.5	33.5	16.1	16.1	55.4	55.4	44.1	6.7	7.0	6.4	75.8	82.6	68.4	6.7	9.4	0.0	35.0	0.0	0.0	11.3	4.0	15.5	59.6	59.6
Namibia	NAM	42.6	47.7	47.7	21.6	21.6	52.1	52.1	69.8	71.0	100.0	8.7	67.7	79.8	53.0	70.7	0.3	100.0	66.2	96.1	96.1	60.2	2.1	85.1	16.7	16.7
Niger	NER	28.8	36.3	36.3	29.4	29.4	17.4	17.4	76.7	72.1	100.0	19.9	86.2	87.5	84.9	70.7	0.0	100.0	73.1	19.9	19.9	75.2	100.0	36.0	100.0	100.0
Nigeria	NGA	60.7	84.0	84.0	62.7	62.7	8.2	8.2	44.4	3.3	4.5	1.3	67.6	55.8	77.7	36.5	1.2	51.6	17.2	2.7	2.7	29.7	29.5	30.0	1.6	1.6
Nicaragua	NIC	40.8	41.9	41.9	13.2	13.2	55.3	55.3	31.7	35.0	28.4	40.6	41.9	26.4	53.1	5.0	7.0	0.0	70.7	100.0	100.0	70.7	0.0	100.0	0.8	0.8
Nepal	NPL	44.9	53.6	53.6	34.8	34.8	44.4	44.4	54.7	73.2	26.8	100.0	58.8	76.9	31.7	12.2	0.0	17.2	26.1	40.2	40.2	6.8	0.6	9.5	19.6	19.6
Nauru	NRU	76.6	70.7	70.7	100.0	100.0	51.0	51.0	28.8	0.0	0.0	0.0	48.4	8.2	67.9	12.4	17.6	0.0	58.9	0.0	0.0	20.0	0.0	28.3	100.0	100.0
Oman	OMN	38.8	51.4	51.4	30.7	30.7	30.6	30.6	69.4	51.5	0.6	72.8	82.8	92.0	72.4	70.5	1.2	99.6	41.0	0.0	0.0	71.0	100.0	9.1	0.9	0.9
Pakistan	PAK	35.3	51.6	51.6	27.3	27.3	18.3	18.3	62.4	61.3	22.9	83.6	62.4	86.2	18.9	63.6	1.9	90.0	71.3	3.5	3.5	72.3	100.0	21.4	100.0	100.0
Panama	PAN	31.2	24.7	24.7	25.0	25.0	41.0	41.0	30.5	3.5	3.3	3.8	52.6	46.1	58.5	3.6	5.0	0.0	43.5	0.0	0.0	58.7	0.0	83.0	47.3	47.3
Peru	PER	28.5	41.9	41.9	19.3	19.3	17.8	17.8	31.8	21.1	25.4	15.7	48.1	53.6	41.8	16.5	0.4	23.3	36.3	39.5	39.5	48.9	0.0	69.2	1.1	1.1
Philippines	PHL	39.8	59.9	59.9	25.4	25.4	22.7	22.7	57.0	79.4	99.8	51.5	58.5	41.8	71.4	5.3	7.6	0.0	12.2	20.6	20.6	4.6	0.2	6.4	0.1	0.1
Palau	PLW	75.0	90.5	90.5	42.6	42.6	82.9	82.9	53.8	40.7	57.5	0.0	82.9	78.5	87.1	11.9	16.8	0.0	11.5	0.0	0.0	19.8	0.0	28.0	0.0	0.0
Papua N G	PNG	33.7	52.1	52.1	23.0	23.0	12.6	12.6	25.5	22.1	31.0	4.1	38.2	0.0	54.0	3.1	4.4	0.0	18.3	24.1	24.1	2.8	0.4	3.9	20.3	20.3
North Korea	PRK	28.5	47.8	47.8	5.2	5.2	10.7	10.7	51.2	72.0	100.0	19.5	51.6	72.9	0.0	3.2	4.6	0.0	4.9	8.3	8.3	1.9	0.0	2.8	0.0	0.0
Paraguay	PRY	41.0	57.4	57.4	33.9	33.9	24.4	24.4	39.7	22.3	31.5	1.4	55.7	71.9	32.4	33.6	0.0	47.6	63.2	100.0	100.0	44.6	0.0	63.1	1.1	1.1
Qatar	QAT	45.6	74.0	74.0	23.3	23.3	15.1	15.1	45.0	0.0	0.0	0.0	76.4	92.6	55.6	15.2	21.4	0.0	36.6	0.0	0.0	63.4	89.5	4.0	1.0	1.0
Rwanda	RWA	33.3	33.3	33.3	41.5	41.5	22.2	22.2	40.8	6.8	8.7	4.1	70.4	71.8	68.9	0.0	0.0	0.0	60.5	4.1	4.1	30.8	33.1	28.3	100.0	100.0
Saudi Arabia	SAU	49.8	82.8	82.8	20.0	20.0	13.2	13.2	59.5	1.2	0.1	1.6	75.1	91.3	54.1	70.7	0.8	100.0	41.7	0.3	0.3	72.2	100.0	21.0	0.2	0.2
Sudan	SDN	62.0	38.7	38.7	100.0	100.0	7.2	7.2	65.6	10.5	14.7	2.4	88.4	87.0	89.7	70.7	0.2	100.0	73.0	7.8	7.8	77.1	100.0	43.4	100.0	100.0
Senegal	SEN	34.2	6.3	6.3	17.6	17.6	56.2	56.2	55.8	11.1	15.2	4.0	74.9	64.3	84.1	59.9	6.7	84.5	27.6	32.6	32.6	30.6	30.6	30.7	16.6	16.6
Singapore	SGP	61.5	34.0	34.0	14.0	14.0	100.0	100.0	31.0	0.0	0.0	0.0	52.2	5.2	73.7	12.4	17.6	0.0	3.5	3.8	3.8	4.6	0.3	6.5	0.0	0.0
Solomon Islands	SLB	56.7	73.8	73.8	45.5	45.5	46.1	46.1	29.1	24.8	32.0	14.2	43.7	0.0	61.8	4.0	5.6	0.0	59.2	100.0	100.0	22.4	0.0	31.7	0.1	0.1
Sierra Leone	SLE	67.3	57.4	57.4	100.0	100.0	16.9	16.9	36.8	2.7	0.7	3.8	63.5	41.1	79.9	4.7	6.6	0.0	43.2	72.3	72.3	18.7	4.7	26.0	3.3	3.3

Country	**ISO**	**Eco. vul.**	**Cpt #1**	*Ind #1*	**Cpt #2**	*Ind #2*	**Cpt #3**	*Ind #3*	**Env. vul.**	**Cpt #4**	*Ind #4*	*Ind #5*	**Cpt #5**	*Ind #6*	*Ind #7*	**Cpt #6**	*Ind #8*	*Ind #9*	**Soc. vul.**	**Cpt #7**	*Ind #10*	**Cpt #8**	*Ind #11*	*Ind #12*	**Cpt #9**	*Ind #13*
El Salvador	SLV	31.7	26.2	26.2	18.7	18.7	44.5	44.5	50.4	76.5	41.3	100.0	41.9	27.8	52.3	4.1	5.8	0.0	70.7	100.0	100.0	70.7	0.0	100.0	0.1	0.1
Somalia	SOM	62.3	40.6	40.6	0.0	0.0	100.0	100.0	83.5	100.0	100.0	100.0	76.9	81.9	71.6	70.7	0.7	100.0	30.2	44.7	44.7	24.5	15.7	30.9	11.4	11.4
South Sudan	SSD	80.5	97.2	97.2	100.0	100.0	1.3	1.3	64.0	50.9	72.0	0.0	84.2	64.7	100.0	51.1	0.0	72.2	73.1	16.6	16.6	75.7	100.0	38.3	100.0	100.0
Sao Tome & Pr.	STP	66.8	83.1	83.1	56.0	56.0	57.9	57.9	31.2	0.0	0.0	0.0	54.1	53.7	54.5	1.2	1.7	0.0	60.8	100.0	100.0	33.2	36.4	29.6	0.0	0.0
Suriname	SUR	55.2	79.1	79.1	38.8	38.8	37.2	37.2	30.5	2.9	4.1	0.0	52.5	9.7	73.6	5.4	7.7	0.0	37.0	0.0	0.0	64.2	0.0	90.7	0.8	0.8
Eswatini	SWZ	51.4	63.3	63.3	40.3	40.3	47.8	47.8	53.3	70.7	100.0	0.0	43.8	57.3	23.4	40.0	0.0	56.6	41.4	0.0	0.0	70.9	7.3	100.0	11.1	11.1
Seychelles	SYC	69.0	53.4	53.4	37.7	37.7	100.0	100.0	41.8	25.4	14.2	33.1	56.5	36.2	71.2	37.4	52.9	0.0	13.2	0.0	0.0	22.9	9.4	31.0	0.0	0.0
Syria	SYR	57.6	47.8	47.8	75.4	75.4	44.6	44.6	53.5	3.9	5.6	0.0	59.6	84.4	0.0	70.7	0.1	100.0	65.6	0.0	0.0	73.4	100.0	27.6	86.8	86.8
Chad	TCD	82.0	99.3	99.3	100.0	100.0	17.3	17.3	65.1	30.3	42.9	0.8	85.7	83.3	88.1	66.8	0.0	94.5	73.5	17.2	17.2	76.8	100.0	42.4	100.0	100.0
Togo	TGO	38.9	12.5	12.5	24.7	24.7	61.5	61.5	36.6	2.7	3.8	0.0	62.9	51.3	72.7	6.8	0.8	9.6	25.6	7.1	7.1	20.6	14.0	25.6	38.5	38.5
Thailand	THA	35.4	29.7	29.7	17.8	17.8	50.6	50.6	64.5	81.2	73.8	88.0	76.6	64.4	87.2	5.0	7.1	0.0	18.9	7.6	7.6	17.2	14.4	19.6	26.9	26.9
Tajikistan	TJK	49.1	64.0	64.0	44.8	44.8	33.4	33.4	54.2	74.1	31.1	100.0	51.8	73.3	0.0	25.1	0.0	35.6	41.9	4.2	4.2	72.2	100.0	20.5	5.6	5.6
Turkmenistan	TKM	56.8	95.7	95.7	19.1	19.1	12.2	12.2	54.9	0.0	0.0	0.0	63.6	89.9	0.0	70.7	0.0	100.0	42.0	0.0	0.0	72.7	100.0	23.7	0.1	0.1
Timor-Leste	TLS	67.5	48.1	48.1	100.0	100.0	36.6	36.6	31.0	7.4	7.9	6.8	53.0	39.2	63.8	5.4	2.6	7.2	10.3	17.6	17.6	2.8	0.4	3.9	0.0	0.0
Tonga	TON	59.7	70.5	70.5	41.3	41.3	63.3	63.3	61.1	92.9	85.2	100.0	47.0	27.2	60.6	18.5	26.2	0.0	9.6	0.0	0.0	16.6	0.0	23.5	0.0	0.0
Trini. & Tob.	TTO	53.2	66.6	66.6	47.6	47.6	42.2	42.2	48.1	5.1	7.2	0.1	82.9	92.8	71.7	6.4	9.0	0.0	41.2	0.0	0.0	70.7	0.0	100.0	9.4	9.4
Tunisia	TUN	30.4	31.6	31.6	12.1	12.1	40.4	40.4	53.1	0.5	0.6	0.5	61.6	85.9	14.3	68.2	4.1	96.4	42.3	0.0	0.0	73.2	100.0	26.6	1.8	1.8
Turkey	TUR	17.6	23.1	23.1	17.4	17.4	10.0	10.0	45.0	2.9	0.9	4.0	56.4	79.7	0.0	53.8	0.7	76.1	71.3	0.1	0.1	72.6	100.0	23.2	100.0	100.0
Tuvalu	TUV	66.0	98.6	98.6	50.2	50.2	29.1	29.1	50.8	41.0	58.0	0.0	56.2	0.0	79.5	53.7	76.0	0.0	7.2	0.0	0.0	12.5	0.0	17.7	0.0	0.0
Tanzania	TZA	19.8	28.2	28.2	15.0	15.0	12.4	12.4	42.6	11.0	14.5	5.5	59.3	65.7	52.0	42.5	7.9	59.5	40.5	4.3	4.3	25.1	24.4	25.9	65.4	65.4
Uganda	UGA	35.2	41.0	41.0	41.4	41.4	17.9	17.9	41.4	6.7	9.4	0.1	70.7	63.5	77.2	10.1	0.0	14.2	72.6	20.7	20.7	73.5	100.0	28.4	100.0	100.0
Uruguay	URY	29.7	46.7	46.7	17.2	17.2	12.9	12.9	31.9	5.3	4.2	6.3	54.9	77.7	0.0	1.0	1.4	0.0	30.6	0.0	0.0	53.0	0.0	74.9	1.7	1.7
Uzbekistan	UZB	28.0	25.5	25.5	40.4	40.4	8.2	8.2	53.6	0.1	0.1	0.0	62.5	88.3	0.0	68.6	0.0	97.0	42.1	0.0	0.0	72.9	100.0	24.9	0.0	0.0
St Vinc. & Gren	VCT	62.0	75.5	75.5	58.6	58.6	49.0	49.0	62.3	73.9	30.4	100.0	78.6	87.2	68.9	2.8	4.0	0.0	70.7	100.0	100.0	70.7	0.0	100.0	0.0	0.0
Venezuela	VEN	49.7	75.0	75.0	42.2	42.2	0.2	0.2	32.3	0.8	0.7	0.8	55.4	46.5	63.0	7.9	4.1	10.4	61.1	0.0	0.0	68.0	0.0	96.2	81.2	81.2
Viet Nam	VNM	50.0	65.0	65.0	7.1	7.1	56.9	56.9	49.7	57.8	26.6	77.2	61.0	51.8	69.0	19.2	27.1	0.0	11.1	11.3	11.3	15.6	1.7	22.0	0.0	0.0
Vanuatu	VUT	62.1	80.0	80.0	53.9	53.9	47.6	47.6	62.7	100.0	100.0	100.0	42.4	0.0	60.0	2.1	3.0	0.0	9.3	0.0	0.0	16.1	0.0	22.8	0.0	0.0
Samoa	WSM	53.7	77.7	77.7	9.4	9.4	50.2	50.2	59.5	70.9	6.5	100.0	74.7	65.6	82.8	2.4	3.4	0.0	58.2	100.0	100.0	12.6	0.0	17.8	0.3	0.3

Country	ISO	Eco. vul.	Cpt #1	*Ind #1*	Cpt #2	*Ind #2*	Cpt #3	*Ind #3*	Env. vul.	Cpt #4	*Ind #4*	*Ind #5*	Cpt #5	*Ind #6*	*Ind #7*	Cpt #6	*Ind #8*	*Ind #9*	Soc. vul.	Cpt #7	*Ind #10*	Cpt #8	*Ind #11*	*Ind #12*	Cpt #9	*Ind #13*
Yemen	YEM	74.0	66.8	66.8	100.0	100.0	44.5	44.5	59.7	7.4	1.2	10.4	75.1	85.5	62.9	70.6	0.6	99.9	85.7	100.0	100.0	44.8	63.3	3.0	100.0	100.0
South Africa	ZAF	20.3	22.8	22.8	15.8	15.8	21.6	21.6	54.1	19.1	25.7	8.2	65.2	79.2	47.2	64.5	0.2	91.2	39.5	7.4	7.4	62.4	4.2	88.1	27.0	27.0
Zambia	ZMB	51.6	70.7	70.7	46.2	46.2	29.2	29.2	38.6	21.8	30.9	0.0	55.0	57.4	52.5	31.1	0.0	44.0	32.1	17.7	17.7	34.8	16.6	46.4	39.5	39.5
Zimbabwe	ZWE	65.7	48.2	48.2	100.0	100.0	24.7	24.7	64.3	76.1	100.0	39.9	47.4	63.1	22.5	66.0	0.0	93.3	48.7	54.9	54.9	63.5	4.7	89.6	8.8	8.8
Mean		49.8	58.9	58.9	40.1	40.1	37.3	37.3	49.5	31.1	28.8	25.5	63.1	64.0	53.4	31.8	8.6	37.7	41.4	25.4	25.4	43.4	29.4	40.9	26.0	26.0
Median		50.5	62.2	62.2	34.1	34.1	34.0	34.0	50.5	19.0	15.0	6.1	61.7	69.6	59.8	21.4	2.0	11.4	40.8	4.3	4.3	41.1	4.7	29.3	2.0	2.0
SD		17.3	25.6	25.6	26.1	26.1	23.4	23.4	12.9	30.9	32.6	36.1	12.3	25.3	26.3	28.3	18.7	42.3	22.7	36.8	36.8	26.3	40.3	31.6	38.0	38.0

Note: Eco. vul., Env. vul., Soc. vul. refer respectively to Economic vulnerability, Environmental vulnerability and Social vulnerability. Ind and Cpt refer respectively to Indicator and Concept. The number (#) associated to each concept and indicator corresponds to the description of concepts and indicators provided in Chapter 3.

Lack of structural index: concepts and individual indicators

Country	ISO	L. Eco. res.	Cpt #10	*Ind #14*	Cpt #11	*Ind #15*	Cpt #12	*Ind #16*	*Ind #17*	L. Env. res.	Cpt # 13	*Ind #18*	Cpt #14	*Ind #19*	Cpt # 15	*Ind #20*	L. Soc. res	Cpt # 16	*Ind #21*	*Ind #22*	Cpt #17	*Ind #23*	*Ind #24*	*Ind #25*	Cpt #18	*Ind #26*
Afghanistan	AFG	50.8	47.2	47.2	30.5	30.5	67.7	80.9	51.1	72.5	53.6	53.6	56.6	56.6	98.5	98.5	58.4	56.6	79.0	12.5	71.9	62.0	56.9	91.9	43.2	43.2
Angola	AGO	47.2	59.1	59.1	32.1	32.1	46.7	52.0	40.6	49.2	40.4	40.4	65.9	65.9	35.7	35.7	54.6	59.8	84.5	5.3	65.8	57.2	70.1	69.2	32.2	32.2
Un. Arab Em.	ARE	43.3	29.5	29.5	42.0	42.0	54.6	61.5	46.8	97.9	96.2	96.2	98.2	98.2	99.4	99.4	25.8	20.2	0.4	28.5	2.8	1.5	4.4	1.2	39.7	39.7
Argentina	ARG	63.5	89.1	89.1	29.0	29.0	57.6	75.0	31.5	54.0	37.6	37.6	0.0	0.0	85.6	85.6	21.6	29.5	41.6	3.1	11.0	6.5	8.8	15.6	20.4	20.4
Armenia	ARM	42.6	23.3	23.3	52.2	52.2	46.8	63.2	19.6	67.8	47.9	47.9	65.5	65.5	84.8	84.8	41.3	28.0	33.1	21.7	10.6	7.9	8.9	13.9	64.9	64.9
Antig. & Barb.	ATG	59.8	47.1	47.1	81.4	81.4	43.4	35.7	49.9	67.8	62.1	62.1	89.5	89.5	44.0	44.0	51.0	37.2	25.0	46.3	20.8	13.8	4.2	33.0	77.3	77.3
Azerbaijan	AZE	44.2	29.7	29.7	41.8	41.8	56.8	51.8	61.4	65.6	58.0	58.0	52.8	52.8	82.3	82.3	42.3	28.0	28.9	27.1	16.6	7.6	17.9	21.3	65.6	65.6
Burundi	BDI	61.5	74.9	74.9	40.8	40.8	63.9	78.7	44.4	69.9	56.8	56.8	72.0	72.0	78.9	78.9	70.1	95.6	91.1	100.0	69.4	58.5	53.1	90.5	27.9	27.9
Benin	BEN	39.8	41.3	41.3	40.5	40.5	37.6	52.1	10.3	51.4	56.9	56.9	40.3	40.3	55.5	55.5	76.4	56.3	75.9	23.9	85.3	92.1	83.8	79.5	84.1	84.1
Burkina Faso	BFA	46.7	55.4	55.4	35.9	35.9	46.6	60.9	25.0	66.4	60.3	60.3	37.2	37.2	90.6	90.6	76.4	58.7	81.4	16.6	90.5	86.8	83.9	100.0	76.6	76.6
Bangladesh	BGD	24.4	28.0	28.0	18.0	18.0	26.2	36.1	8.6	73.8	60.2	60.2	88.7	88.7	69.5	69.5	61.2	74.9	35.0	100.0	47.2	57.7	27.7	50.8	58.3	58.3
Bahrain	BHR	46.1	24.5	24.5	57.6	57.6	49.6	44.2	54.4	99.6	100.0	100.0	99.4	99.4	99.5	99.5	61.0	71.3	12.9	100.0	9.9	0.0	4.6	16.6	77.3	77.3

Country	**ISO**	**L. Eco. res.**	**Cpt #10**	*Ind #14*	**Cpt #11**	*Ind #15*	**Cpt #12**	*Ind #16*	*Ind #17*	**L. Env. res.**	**Cpt # 13**	*Ind #18*	**Cpt #14**	*Ind #19*	**Cpt # 15**	*Ind #20*	**L. Soc. res**	**Cpt # 16**	*Ind #21*	*Ind #22*	**Cpt #17**	*Ind #23*	*Ind #24*	*Ind #25*	**Cpt #18**	*Ind #26*
Bahamas	BHS	65.8	46.5	46.5	69.6	69.6	77.4	44.7	100.0	75.6	50.2	50.2	93.7	93.7	76.3	76.3	43.6	21.0	24.7	16.4	7.9	6.1	12.1	1.7	72.2	72.2
Belize	BLZ	61.7	60.7	60.7	69.6	69.6	53.7	65.9	37.8	29.3	19.9	19.9	36.0	36.0	29.8	29.8	54.0	26.7	37.7	3.3	23.6	13.9	9.8	37.1	86.4	86.4
Bolivia	BOL	68.1	99.8	99.8	40.6	40.6	48.0	63.3	24.6	28.9	23.8	23.8	16.6	16.6	40.7	40.7	28.4	31.8	44.9	2.0	37.2	46.7	34.4	28.0	4.9	4.9
Brazil	BRA	59.0	78.9	78.9	15.7	15.7	63.1	68.3	57.4	33.7	23.8	23.8	38.9	38.9	36.6	36.6	48.0	20.1	27.9	5.2	27.7	15.1	12.3	43.8	75.8	75.8
Barbados	BRB	65.4	50.3	50.3	72.1	72.1	71.5	73.2	69.7	78.3	68.6	68.6	94.4	94.4	69.0	69.0	57.7	74.5	33.2	100.0	17.2	4.1	10.0	27.7	64.3	64.3
Brunei Darus.	BRN	62.9	47.7	47.7	68.6	68.6	70.0	21.8	96.5	57.2	26.8	26.8	95.3	95.3	0.0	0.0	50.2	20.1	23.2	16.5	20.3	3.9	8.3	34.0	82.2	82.2
Bhutan	BTN	46.4	46.7	46.7	63.8	63.8	13.8	0.0	19.6	43.6	10.6	10.6	73.0	73.0	16.2	16.2	53.7	20.2	28.3	4.0	47.7	32.7	25.5	71.5	77.2	77.2
Botswana	BWA	67.8	96.6	96.6	54.5	54.5	38.7	29.7	46.0	74.8	55.3	55.3	76.6	76.6	88.7	88.7	53.3	32.1	45.4	0.5	32.4	27.8	42.9	23.2	80.3	80.3
Central Af. Rep.	CAF	54.6	63.6	63.6	48.2	48.2	50.8	68.6	21.6	17.5	22.6	22.6	18.9	18.9	6.7	6.7	80.1	68.7	97.2	1.4	90.4	90.8	100.0	79.3	79.7	79.7
Chile	CHL	63.2	90.9	90.9	36.4	36.4	49.1	54.1	43.4	65.0	18.2	18.2	81.7	81.7	75.4	75.4	37.2	21.5	30.0	5.2	10.5	1.1	4.3	17.6	59.8	59.8
China	CHN	16.8	21.6	21.6	0.0	0.0	19.5	0.0	27.6	69.0	49.3	49.3	81.0	81.0	72.7	72.7	38.3	30.4	28.0	32.6	30.0	17.0	5.5	48.8	50.7	50.7
Côte D'Ivoire	CIV	41.7	44.7	44.7	33.9	33.9	45.5	63.6	10.2	33.4	44.9	44.9	35.6	35.6	7.6	7.6	69.1	52.3	71.8	17.9	74.1	74.9	76.1	71.2	78.1	78.1
Cameroon	CMR	38.5	43.4	43.4	33.8	33.8	37.6	52.9	5.4	30.8	32.5	32.5	38.0	38.0	18.8	18.8	53.4	53.3	74.5	11.9	65.1	62.0	70.7	62.3	38.3	38.3
Dem. R. Congo	COD	44.5	53.8	53.8	23.5	23.5	49.9	59.9	37.4	42.3	32.6	32.6	63.6	63.6	16.2	16.2	73.5	64.4	90.7	8.4	75.8	89.2	79.7	54.2	79.4	79.4
Congo	COG	45.8	53.7	53.7	47.2	47.2	34.4	0.0	48.7	46.9	19.2	19.2	75.9	75.9	21.8	21.8	67.1	49.8	70.3	3.2	67.0	87.9	43.3	62.2	80.8	80.8
Colombia	COL	48.7	64.3	64.3	28.0	28.0	46.9	57.8	32.5	42.2	19.1	19.1	65.9	65.9	25.2	25.2	41.1	21.6	29.0	9.5	23.3	11.9	11.0	37.0	63.6	63.6
Comoros	COM	64.2	64.8	64.8	63.0	63.0	64.8	77.1	49.4	52.6	52.3	52.3	71.8	71.8	20.4	20.4	78.6	81.1	65.0	94.5	67.2	70.0	58.6	72.3	86.3	86.3
Cabo Verde	CPV	46.5	40.2	40.2	66.6	66.6	20.8	16.7	24.3	79.5	61.8	61.8	80.0	80.0	93.5	93.5	41.8	32.9	34.3	31.5	40.5	32.3	12.4	61.0	50.2	50.2
Costa Rica	CRI	58.8	64.2	64.2	47.7	47.7	63.0	65.8	60.1	50.6	25.5	25.5	76.8	76.8	33.5	33.5	22.5	26.3	30.2	21.7	22.0	3.2	5.6	37.5	18.7	18.7
Cuba	CUB	54.3	51.5	51.5	40.7	40.7	67.4	91.5	26.4	42.0	44.3	44.3	37.0	37.0	44.4	44.4	16.1	27.1	30.5	23.2	6.5	10.5	2.8	3.0	0.0	0.0
Djibouti	DJI	51.5	39.3	39.3	61.8	61.8	50.9	44.0	57.0	90.3	67.3	67.3	99.6	99.6	100.0	100.0	53.9	31.4	43.3	9.9	61.4	41.8	54.2	81.5	62.9	62.9
Dominica	DMA	64.2	48.8	48.8	83.9	83.9	54.4	66.4	38.9	33.6	46.1	46.1	35.3	35.3	4.0	4.0	38.1	23.9	26.6	20.8	30.2	22.2	18.0	43.7	53.6	53.6
Dominican Rep.	DOM	42.7	49.0	49.0	41.2	41.2	37.2	50.3	15.3	55.4	48.3	48.3	76.6	76.6	31.6	31.6	41.7	44.9	39.3	49.8	27.7	16.4	30.9	32.8	49.3	49.3
Algeria	DZA	19.7	0.0	0.0	29.4	29.4	17.2	13.7	20.2	77.5	68.9	68.9	59.4	59.4	98.7	98.7	35.6	30.9	43.6	3.5	29.4	14.4	20.3	44.4	44.5	44.5
Ecuador	ECU	50.1	70.0	70.0	37.2	37.2	35.4	46.2	19.0	45.2	24.1	24.1	71.3	71.3	21.3	21.3	24.7	29.2	38.5	15.1	24.0	14.8	10.8	37.4	20.0	20.0
Egypt	EGY	34.1	3.0	3.0	22.2	22.2	54.7	75.8	15.8	97.3	100.0	100.0	92.1	92.1	99.7	99.7	48.7	38.1	48.6	23.2	20.4	4.5	17.4	30.3	72.5	72.5
Eritrea	ERI	51.9	31.9	31.9	50.8	50.8	66.9	94.2	9.5	74.8	58.1	58.1	59.6	59.6	99.4	99.4	60.4	51.2	72.1	6.0	73.0	95.6	37.2	74.1	54.7	54.7
Ethiopia	ETH	40.4	61.8	61.8	21.3	21.3	24.9	22.2	27.4	66.2	54.8	54.8	67.0	67.0	75.2	75.2	58.0	51.2	68.0	25.0	82.3	100.0	47.6	89.9	26.1	26.1
Fiji	FJI	69.9	91.5	91.5	62.5	62.5	48.8	66.8	17.2	41.6	22.0	22.0	68.0	68.0	8.5	8.5	43.4	29.0	39.6	10.8	17.4	5.0	23.8	17.7	67.2	67.2
Micronesia FS	FSM	76.6	73.8	73.8	80.1	80.1	75.9	39.1	100.0	71.0	27.4	27.4	66.0	66.0	100.0	100.0	64.2	40.5	45.2	35.1	32.1	19.5	22.5	46.9	98.5	98.5

Country	**ISO**	**L. Eco. res.**	**Cpt #10**	*Ind #14*	**Cpt #11**	*Ind #15*	**Cpt #12**	*Ind #16*	*Ind #17*	**L. Env. res.**	**Cpt # 13**	*Ind #18*	**Cpt #14**	*Ind #19*	**Cpt # 15**	*Ind #20*	**L. Soc. res**	**Cpt # 16**	*Ind #21*	*Ind #22*	**Cpt #17**	*Ind #23*	*Ind #24*	*Ind #25*	**Cpt #18**	*Ind #26*
Gabon	GAB	53.0	48.1	48.1	55.0	55.0	55.6	44.1	65.1	31.6	13.3	13.3	52.8	52.8	4.6	4.6	52.0	39.9	56.4	1.5	43.4	56.3	38.3	31.6	68.0	68.0
Georgia	GEO	38.2	1.2	1.2	49.6	49.6	43.8	53.1	31.7	55.0	30.0	30.0	77.8	77.8	46.2	46.2	43.7	29.7	40.3	11.6	9.2	14.4	6.9	0.0	69.1	69.1
Ghana	GHA	38.0	43.2	43.2	32.4	32.4	37.5	52.4	8.0	55.7	55.7	55.7	64.6	64.6	44.9	44.9	62.4	46.9	58.9	30.5	61.3	87.4	43.0	42.0	75.7	75.7
Guinea	GIN	40.7	44.4	44.4	39.9	39.9	37.5	48.5	21.5	30.1	27.4	27.4	38.2	38.2	22.6	22.6	69.8	53.9	75.4	11.2	91.9	82.5	93.2	99.2	57.3	57.3
Gambia	GMB	47.7	39.8	39.8	54.4	54.4	48.0	60.2	31.3	63.0	53.1	53.1	60.6	60.6	73.5	73.5	70.8	68.2	79.2	54.9	61.9	58.0	47.8	76.4	81.1	81.1
Guinea-Bissau	GNB	60.2	41.5	41.5	56.0	56.0	77.5	100.0	44.9	34.4	34.9	34.9	40.8	40.8	26.0	26.0	70.4	50.1	69.2	15.2	84.9	92.4	75.3	86.3	71.6	71.6
Equat. Guinea	GNQ	54.3	43.8	43.8	59.1	59.1	58.6	55.5	61.6	43.9	26.5	26.5	71.3	71.3	1.3	1.3	56.3	44.3	61.6	11.9	61.7	37.2	76.7	64.5	61.0	61.0
Grenada	GRD	70.0	52.0	52.0	80.2	80.2	74.5	58.7	87.4	59.0	50.4	50.4	87.4	87.4	16.7	16.7	40.8	62.3	36.6	80.1	22.5	8.9	13.7	35.4	24.4	24.4
Guatemala	GTM	53.5	63.9	63.9	37.1	37.1	55.9	76.9	18.6	52.7	37.9	37.9	76.1	76.1	33.3	33.3	54.0	43.9	51.1	35.2	45.5	36.1	21.6	66.7	68.9	68.9
Guyana	GUY	54.0	55.9	55.9	63.5	63.5	39.6	45.1	33.2	4.2	0.0	0.0	0.0	0.0	7.3	7.3	30.3	28.3	40.0	0.4	28.8	16.2	26.2	39.3	33.7	33.7
Honduras	HND	49.1	62.5	62.5	42.1	42.1	39.6	53.8	15.6	45.7	34.0	34.0	66.6	66.6	25.8	25.8	41.4	32.9	42.0	19.9	34.6	22.8	14.3	53.5	53.6	53.6
Haiti	HTI	46.8	50.2	50.2	40.8	40.8	48.8	68.5	8.3	60.9	54.5	54.5	75.5	75.5	49.6	49.6	77.5	71.6	46.7	89.9	66.8	73.0	58.7	67.9	91.8	91.8
Indonesia	IDN	35.4	55.5	55.5	13.6	13.6	22.3	29.0	12.2	41.6	36.2	36.2	61.7	61.7	9.2	9.2	43.9	32.4	33.7	31.0	30.8	28.4	21.0	39.8	61.5	61.5
India	IND	21.2	27.3	27.3	0.0	0.0	24.6	31.2	15.1	69.9	55.4	55.4	74.8	74.8	77.4	77.4	66.6	74.9	35.1	100.0	46.5	46.8	31.4	57.6	74.4	74.4
Iran	IRN	26.9	14.7	14.7	23.8	23.8	37.3	45.9	25.9	72.1	51.6	51.6	57.6	57.6	98.1	98.1	54.4	22.3	29.5	11.4	15.2	12.8	10.8	20.4	90.3	90.3
Iraq	IRQ	43.4	9.7	9.7	30.2	30.2	68.1	60.7	74.8	78.1	56.7	56.7	72.4	72.4	99.1	99.1	41.7	46.4	62.3	20.9	30.1	8.0	23.3	45.9	46.4	46.4
Jamaica	JAM	50.3	53.1	53.1	52.2	52.2	45.3	56.7	29.7	55.9	43.3	43.3	85.2	85.2	14.7	14.7	46.4	44.0	23.5	57.6	22.6	15.4	11.4	34.3	63.4	63.4
Jordan	JOR	38.3	3.4	3.4	41.8	41.8	51.5	56.6	45.8	92.3	82.0	82.0	94.1	94.1	99.8	99.8	48.1	37.4	45.8	26.4	14.8	2.7	12.6	22.2	72.9	72.9
Kazakhstan	KAZ	41.5	44.5	44.5	36.6	36.6	43.1	55.5	25.0	62.1	43.7	43.7	0.0	0.0	98.3	98.3	32.3	31.4	44.4	1.1	5.3	2.5	7.6	4.4	45.9	45.9
Kenya	KEN	43.3	53.1	53.1	27.7	27.7	45.0	60.6	19.5	76.0	64.8	64.8	75.2	75.2	86.5	86.5	55.1	46.2	62.5	19.1	58.4	73.2	39.5	57.6	59.7	59.7
Kyrgyzstan	KGZ	39.3	44.3	44.3	45.7	45.7	24.1	33.7	5.1	67.3	35.9	35.9	56.3	56.3	95.6	95.6	39.9	35.2	49.3	6.9	12.1	3.4	15.6	13.5	58.2	58.2
Cambodia	KHM	39.3	37.7	37.7	37.6	37.6	42.3	59.8	2.7	44.2	36.4	36.4	47.9	47.9	47.4	47.4	48.8	31.5	40.0	19.5	52.7	50.6	23.8	72.2	58.1	58.1
Kiribati	KIR	76.3	81.9	81.9	79.8	79.8	66.2	43.9	82.7	67.4	44.2	44.2	40.8	40.8	100.0	100.0	63.1	46.6	53.9	37.8	51.7	61.3	47.2	45.2	84.3	84.3
St Kitts & Nevis	KNA	62.7	47.3	47.3	86.6	86.6	45.5	35.6	53.6	60.8	63.7	63.7	80.4	80.4	23.5	23.5	47.8	33.8	25.4	40.5	23.2	6.0	8.4	38.8	71.8	71.8
Kuwait	KWT	54.4	18.3	18.3	49.3	49.3	78.1	58.8	93.5	99.7	100.0	100.0	99.3	99.3	99.8	99.8	60.6	39.4	16.0	53.4	29.9	0.0	6.4	51.3	92.6	92.6
Lao PDR	LAO	43.5	52.8	52.8	44.7	44.7	30.0	35.3	23.5	36.1	23.7	23.7	56.9	56.9	9.9	9.9	43.5	30.6	42.8	6.5	50.8	33.3	42.5	69.6	46.5	46.5
Lebanon	LBN	53.8	0.0	0.0	45.0	45.0	81.7	57.8	100.0	78.7	59.5	59.5	92.0	92.0	81.2	81.2	70.7	77.1	43.6	100.0	22.6	6.7	4.7	38.3	92.3	92.3
Liberia	LBR	56.4	46.3	46.3	48.0	48.0	71.4	14.0	100.0	42.8	19.4	19.4	70.7	70.7	10.9	10.9	70.6	52.2	72.9	11.1	79.5	89.6	75.7	72.3	76.8	76.8
Libya	LBY	52.1	0.0	0.0	45.2	45.2	78.2	68.9	86.5	76.4	78.0	78.0	38.1	38.1	99.9	99.9	45.1	27.8	39.4	0.4	29.2	8.7	9.8	48.8	66.9	66.9
Saint Lucia	LCA	66.4	49.9	49.9	76.0	76.0	70.4	54.0	83.7	59.8	51.2	51.2	89.4	89.4	10.9	10.9	49.9	48.1	22.3	64.2	26.3	18.1	12.1	39.9	66.8	66.8

Country	**ISO**	**L. Eco. res.**	**Cpt #10**	*Ind #14*	**Cpt #11**	*Ind #15*	**Cpt #12**	*Ind #16*	*Ind #17*	**L. Env. res.**	**Cpt # 13**	*Ind #18*	**Cpt #14**	*Ind #19*	**Cpt # 15**	*Ind #20*	**L. Soc. res**	**Cpt # 16**	*Ind #21*	*Ind #22*	**Cpt #17**	*Ind #23*	*Ind #24*	*Ind #25*	**Cpt #18**	*Ind #26*
Sri Lanka	LKA	37.4	44.7	44.7	35.3	35.3	30.8	41.1	14.5	53.5	47.2	47.2	77.7	77.7	17.9	17.9	62.4	60.6	38.4	76.6	12.6	10.3	4.8	18.6	88.5	88.5
Lesotho	LSO	70.3	100.0	100.0	55.0	55.0	42.4	40.2	44.5	73.2	47.2	47.2	62.8	62.8	99.6	99.6	54.8	37.5	50.6	15.9	71.6	64.3	84.9	63.6	49.7	49.7
Morocco	MAR	25.3	0.0	0.0	30.8	30.8	31.1	36.6	24.3	68.8	58.1	58.1	46.9	46.9	93.0	93.0	45.1	29.6	37.9	17.7	40.0	18.8	16.6	64.5	60.2	60.2
Madagascar	MDG	52.1	71.6	71.6	33.5	33.5	43.6	60.8	10.7	59.2	30.9	30.9	72.4	72.4	65.8	65.8	62.3	47.1	65.8	10.1	75.1	96.9	48.4	71.9	61.5	61.5
Maldives	MDV	55.4	49.0	49.0	67.1	67.1	47.9	23.1	63.7	93.4	83.4	83.4	97.9	97.9	98.2	98.2	68.1	72.0	19.2	100.0	30.0	6.7	4.6	51.4	88.4	88.4
Mexico	MEX	46.8	65.4	65.4	20.1	20.1	43.5	57.7	21.6	56.7	44.5	44.5	63.3	63.3	60.6	60.6	21.2	27.6	36.5	13.8	21.7	12.0	11.5	33.6	10.8	10.8
Marshall Islands	MHL	75.2	78.6	78.6	85.7	85.7	58.8	56.6	61.0	73.9	37.1	37.1	70.7	70.7	100.0	100.0	60.0	52.6	50.1	54.9	22.1	18.4	28.3	18.1	86.9	86.9
Mali	MLI	49.2	57.9	57.9	36.2	36.2	51.0	67.2	26.3	62.8	44.6	44.6	30.6	30.6	94.4	94.4	75.9	67.0	94.6	3.3	86.3	67.8	90.0	98.2	73.2	73.2
Myanmar	MMR	28.7	32.8	32.8	27.4	27.4	25.4	32.4	15.3	37.5	27.4	27.4	53.0	53.0	25.9	25.9	54.6	25.6	31.6	17.7	46.0	31.1	42.0	60.2	78.6	78.6
Mongolia	MNG	44.3	44.4	44.4	51.5	51.5	35.5	29.3	40.8	57.7	32.5	32.5	15.1	15.1	93.3	93.3	45.8	29.9	42.3	0.0	30.9	41.0	13.4	31.7	66.6	66.6
Mozambique	MOZ	48.9	76.5	76.5	32.5	32.5	15.9	13.7	17.8	44.4	43.9	43.9	59.3	59.3	21.5	21.5	56.7	56.1	78.9	8.1	78.8	76.3	68.8	89.9	17.2	17.2
Mauritania	MRT	35.8	33.2	33.2	48.7	48.7	19.3	19.8	18.9	87.3	79.2	79.2	81.2	81.2	99.9	99.9	58.1	54.0	76.4	0.5	65.8	62.0	61.0	73.8	53.4	53.4
Mauritius	MUS	63.6	72.8	72.8	59.4	59.4	57.5	63.7	50.6	67.0	48.5	48.5	87.4	87.4	59.0	59.0	57.6	72.9	24.8	100.0	15.3	5.2	13.2	22.4	66.4	66.4
Malawi	MWI	64.3	87.4	87.4	36.6	36.6	58.7	82.2	11.7	59.6	57.0	57.0	57.8	57.8	63.7	63.7	64.5	65.1	80.8	44.1	68.5	80.9	38.2	77.8	59.5	59.5
Malaysia	MYS	38.9	45.2	45.2	31.9	31.9	38.4	50.0	21.0	31.5	27.5	27.5	47.0	47.0	2.6	2.6	46.4	25.4	28.5	21.8	12.2	0.7	6.0	20.3	75.2	75.2
Namibia	NAM	60.2	73.1	73.1	53.8	53.8	51.3	53.7	48.9	63.6	46.9	46.9	33.3	33.3	94.0	94.0	41.5	39.3	55.5	0.2	55.7	71.6	37.7	52.6	23.0	23.0
Niger	NER	41.6	52.3	52.3	34.8	34.8	35.2	36.9	33.4	71.7	73.9	73.9	0.0	0.0	99.9	99.9	76.9	70.8	100.0	3.7	90.9	94.5	76.6	100.0	66.7	66.7
Nigeria	NGA	37.8	41.0	41.0	16.3	16.3	48.5	68.4	3.8	59.6	54.7	54.7	57.3	57.3	66.2	66.2	77.2	65.9	79.1	49.4	75.7	66.5	100.0	52.7	88.4	88.4
Nicaragua	NIC	49.7	63.6	63.6	45.5	45.5	36.2	48.6	16.0	41.2	24.8	24.8	44.2	44.2	50.3	50.3	28.0	30.9	42.0	11.9	36.5	31.3	13.9	53.0	8.6	8.6
Nepal	NPL	39.1	47.3	47.3	32.9	32.9	35.7	40.6	30.0	57.9	36.9	36.9	83.4	83.4	41.8	41.8	44.0	44.2	45.0	43.5	51.2	44.5	26.6	71.9	35.0	35.0
Nauru	NRU	77.2	81.3	81.3	100.0	100.0	35.4	43.9	24.2	85.2	56.7	56.7	92.5	92.5	100.0	100.0	70.1	81.8	58.1	100.0	29.1	37.2	17.6		84.8	84.8
Oman	OMN	48.2	33.2	33.2	48.0	48.0	59.7	48.5	69.1	88.9	67.8	67.8	95.7	95.7	99.8	99.8	56.8	14.9	20.9	2.8	8.1	1.5	8.7	10.9	96.9	96.9
Pakistan	PAK	36.7	26.0	26.0	15.6	15.6	55.8	78.6	6.5	79.0	69.1	69.1	69.8	69.8	95.2	95.2	61.0	62.4	60.4	64.3	63.1	44.2	63.4	77.4	57.4	57.4
Panama	PAN	47.7	62.7	62.7	49.2	49.2	21.9	14.0	27.6	43.0	21.8	21.8	66.9	66.9	24.0	24.0	42.3	29.9	40.5	12.3	20.1	23.0	15.2	21.3	63.8	63.8
Peru	PER	54.7	78.6	78.6	31.8	31.8	42.2	55.3	22.3	43.5	17.4	17.4	63.9	63.9	35.9	35.9	33.7	29.1	40.9	5.2	23.1	27.0	10.7	27.4	45.0	45.0
Philippines	PHL	35.6	41.8	41.8	21.5	21.5	39.8	54.2	15.3	53.2	41.3	41.3	79.0	79.0	23.2	23.2	48.3	65.6	44.0	81.7	29.3	26.7	24.0	36.0	42.8	42.8
Palau	PLW	77.5	57.7	57.7	95.8	95.8	74.4	39.9	97.3	46.5	15.6	15.6	74.1	74.1	27.5	27.5	51.8	19.6	26.5	8.2	9.3	1.6	15.8	3.1	87.1	87.1
Papua N G	PNG	62.8	77.5	77.5	43.0	43.0	63.0	78.6	42.0	44.7	11.5	11.5	76.6	76.6	0.6	0.6	72.4	35.1	49.4	4.2	71.0	87.7	41.6	75.5	97.2	97.2
North Korea	PRK	37.4	29.4	29.4	33.7	33.7	46.7		46.7	56.5	46.6	46.6	79.9	79.9	31.9	31.9	45.3	38.8	27.8	47.3	17.4	19.9	14.6		65.9	65.9
Paraguay	PRY	68.8	100.0	100.0	44.8	44.8	46.8	63.1	19.7	29.2	28.4	28.4	0.0	0.0	41.9	41.9	45.5	29.4	41.5	3.1	24.7	13.5	16.8	37.0	68.8	68.8

Country	**ISO**	**L. Eco. res.**	**Cpt #10**	*Ind #14*	**Cpt #11**	*Ind #15*	**Cpt #12**	*Ind #16*	*Ind #17*	**L. Env. res.**	**Cpt # 13**	*Ind #18*	**Cpt #14**	*Ind #19*	**Cpt # 15**	*Ind #20*	**L. Soc. res**	**Cpt # 16**	*Ind #21*	*Ind #22*	**Cpt #17**	*Ind #23*	*Ind #24*	*Ind #25*	**Cpt #18**	*Ind #26*
Qatar	QAT	45.1	26.4	26.4	52.7	52.7	51.3	16.2	70.7	97.3	93.7	93.7	98.4	98.4	99.9	99.9	57.5	37.1	0.0	52.5	15.4	0.0	3.8	26.4	91.0	91.0
Rwanda	RWA	53.5	73.3	73.3	40.0	40.0	40.1	51.8	23.2	71.6	58.4	58.4	77.0	77.0	77.7	77.7	58.0	84.1	64.3	100.0	55.1	38.8	38.2	78.4	0.0	0.0
Saudi Arabia	SAU	38.6	23.3	23.3	31.4	31.4	54.3	51.3	57.3	87.2	81.7	81.7	78.4	78.4	99.9	99.9	38.1	17.4	24.4	3.2	8.7	0.3	5.0	14.1	63.2	63.2
Sudan	SDN	42.2	28.7	28.7	29.5	29.5	60.4	84.0	15.3	72.2	78.8	78.8	0.0	0.0	97.2	97.2	56.6	50.0	70.5	5.0	71.1	71.4	54.6	84.1	45.5	45.5
Senegal	SEN	37.3	38.5	38.5	37.8	37.8	35.5	48.6	12.5	63.5	51.1	51.1	58.3	58.3	78.1	78.1	49.2	54.0	74.2	18.1	64.7	51.8	36.7	92.3	12.3	12.3
Singapore	SGP	45.8	47.2	47.2	46.4	46.4	43.7	47.7	39.2	84.4	78.1	78.1	100.0	100.0	72.5	72.5	50.0	71.5	15.4	100.0	4.8	0.0	0.0	8.4	48.5	48.5
Solomon Islands	SLB	69.8	83.5	83.5	65.0	65.0	58.3	78.3	25.7	39.4	14.5	14.5	66.5	66.5	4.5	4.5	69.0	46.7	65.9	4.8	58.3	74.1	17.3	66.4	93.3	93.3
Sierra Leone	SLE	61.0	44.8	44.8	44.0	44.0	84.9	66.5	100.0	34.9	26.1	26.1	53.9	53.9	8.1	8.1	73.5	50.0	66.2	24.6	90.2	92.0	100.0	77.0	74.6	74.6
El Salvador	SLV	55.4	64.0	64.0	45.5	45.5	55.1	71.4	31.2	56.7	47.4	47.4	72.4	72.4	46.7	46.7	43.1	54.9	38.7	67.3	33.0	18.3	10.8	53.0	38.4	38.4
Somalia	SOM	60.7	51.6	51.6	38.2	38.2	83.3	62.2	100.0	82.7	64.8	64.8	84.9	84.9	95.5	95.5	72.5	66.2	93.5	5.2	86.8	71.3	100.0		62.1	62.1
South Sudan	SSD	63.1	64.9	64.9	40.9	40.9	77.8	80.7	74.8	54.1	47.6	47.6	53.9	53.9	60.1	60.1	66.0	61.7	87.2	3.7	86.5	95.6	94.3	66.3	42.2	42.2
Sao Tome & Pr.	STP	55.1	48.7	48.7	74.7	74.7	34.1	38.6	29.0	39.1	33.1	33.1	58.9	58.9	3.8	3.8	58.6	61.5	71.5	49.6	52.0	64.2	13.5	61.7	61.8	61.8
Suriname	SUR	50.4	56.0	56.0	66.1	66.1	11.3	4.6	15.3	44.6	5.6	5.6	76.1	76.1	11.5	11.5	36.3	26.6	37.6	0.4	20.5	14.6	15.3	28.4	53.1	53.1
Eswatini	SWZ	75.3	97.9	97.9	60.3	60.3	61.5	81.6	29.9	54.6	47.8	47.8	66.3	66.3	47.7	47.7	61.9	39.6	54.0	14.6	53.8	42.6	48.2	67.5	83.9	83.9
Seychelles	SYC	63.7	59.9	59.9	81.3	81.3	44.4	18.4	60.0	77.4	37.7	37.7	96.8	96.8	84.8	84.8	33.1	41.3	29.3	50.5	15.2	0.4	11.5	23.7	36.8	36.8
Syria	SYR	35.0	1.4	1.4	37.1	37.1	47.9	64.6	20.4	70.7	64.8	64.8	32.9	32.9	98.6	98.6	56.0	44.3	57.9	24.0	43.6	10.6	19.9	72.1	74.5	74.5
Chad	TCD	46.9	51.9	51.9	38.0	38.0	49.6	67.7	18.6	65.4	56.1	56.1	31.7	31.7	93.1	93.1	77.8	65.9	93.2	2.4	97.3	96.1	100.0	95.7	66.0	66.0
Togo	TGO	42.9	41.9	41.9	43.7	43.7	43.1	59.2	14.5	44.9	52.2	52.2	27.9	27.9	50.5	50.5	65.7	53.3	67.6	33.4	76.3	90.6	62.6	72.9	65.3	65.3
Thailand	THA	33.5	35.1	35.1	25.2	25.2	38.8	50.6	21.5	42.5	44.6	44.6	36.1	36.1	46.0	46.0	49.6	28.7	26.5	30.7	22.6	3.1	6.5	38.5	77.8	77.8
Tajikistan	TJK	37.9	45.1	45.1	42.5	42.5	21.7	30.5	3.9	75.3	36.9	36.9	77.2	77.2	98.5	98.5	42.6	39.4	54.0	14.1	19.4	5.1	30.2	13.9	59.2	59.2
Turkmenistan	TKM	39.0	41.0	41.0	46.3	46.3	27.2	0.0	38.5	72.7	69.9	69.9	31.0	31.0	100.0	100.0	36.9	29.8	42.0	2.5	24.0	2.8	38.8	14.6	51.1	51.1
Timor-Leste	TLS	57.1	65.3	65.3	59.4	59.4	44.6	11.8	61.9	46.3	37.6	37.6	69.6	69.6	13.0	13.0	43.4	45.6	61.7	18.8	55.2	52.6	40.1	69.0	23.0	23.0
Tonga	TON	75.1	93.6	93.6	80.8	80.8	40.1	47.8	30.4	53.1	37.4	37.4	39.5	39.5	74.1	74.1	60.8	49.5	60.2	35.7	10.3	7.4	9.3	13.4	92.4	92.4
Trini. & Tob.	TTO	56.9	53.3	53.3	58.6	58.6	58.5	74.7	35.6	60.8	46.1	46.1	93.2	93.2	17.0	17.0	37.4	50.0	27.3	65.2	11.5	7.1	14.9	11.3	39.7	39.7
Tunisia	TUN	35.5	0.0	0.0	40.5	40.5	46.4	62.0	21.3	66.8	65.9	65.9	13.4	13.4	94.2	94.2	33.8	27.8	35.5	16.8	30.6	8.5	14.0	50.3	41.5	41.5
Turkey	TUR	21.8	0.0	0.0	23.7	23.7	29.5	39.6	13.1	55.7	46.0	46.0	42.8	42.8	73.2	73.2	44.3	28.0	31.8	23.7	23.1	3.9	7.6	39.1	67.7	67.7
Tuvalu	TUV	91.0	87.6	87.6	99.6	99.6	85.1	68.0	99.3	73.7	40.2	40.2	68.5	68.5	100.0	100.0	64.0	66.4	47.0	81.3	19.5	17.5	19.9	21.0	86.5	86.5
Tanzania	TZA	38.6	59.7	59.7	26.9	26.9	13.2	16.0	9.7	48.4	51.9	51.9	45.9	45.9	47.2	47.2	51.9	58.4	81.3	14.6	63.7	80.4	45.8	60.2	24.7	24.7
Uganda	UGA	49.1	71.1	71.1	29.3	29.3	36.5	50.2	12.2	61.8	56.6	56.6	56.9	56.9	70.8	70.8	57.9	68.2	84.0	47.5	67.7	87.5	41.5	66.2	28.8	28.8
Uruguay	URY	68.3	88.8	88.8	50.8	50.8	59.5	67.8	50.0	52.1	23.9	23.9	0.0	0.0	87.0	87.0	42.4	29.2	41.1	4.0	20.9	3.7	3.8	35.9	64.0	64.0

Country	**ISO**	**L. Eco. res.**	**Cpt #10**	*Ind #14*	**Cpt #11**	*Ind #15*	**Cpt #12**	*Ind #16*	*Ind #17*	**L. Env. res.**	**Cpt # 13**	*Ind #18*	**Cpt #14**	*Ind #19*	**Cpt # 15**	*Ind #20*	**L. Soc. res**	**Cpt # 16**	*Ind #21*	*Ind #22*	**Cpt #17**	*Ind #23*	*Ind #24*	*Ind #25*	**Cpt #18**	*Ind #26*
Uzbekistan	UZB	36.4	44.1	44.1	31.7	31.7	32.1	42.3	16.6	79.8	62.7	62.7	72.5	72.5	99.6	99.6	37.2	29.4	38.0	16.9	8.7	0.3	12.2	8.7	56.6	56.6
St Vinc. & Gren	VCT	61.7	50.8	50.8	80.3	80.3	49.0	46.2	51.6	62.1	57.1	57.1	90.9	90.9	8.2	8.2	50.1	48.8	34.8	59.6	15.5	15.3	12.0	18.6	70.1	70.1
Venezuela	VEN	51.8	55.4	55.4	32.6	32.6	62.6	67.5	57.2	50.5	23.7	23.7	77.1	77.1	34.0	34.0	39.8	30.7	42.9	6.7	13.4	5.6	15.9	16.0	60.2	60.2
Viet Nam	VNM	30.7	29.6	29.6	22.4	22.4	38.1	49.8	20.6	52.9	43.1	43.1	75.5	75.5	28.9	28.9	43.6	52.3	29.8	67.8	28.9	21.0	18.4	41.6	46.2	46.2
Vanuatu	VUT	70.4	89.6	89.6	71.9	71.9	40.6	41.9	39.2	13.4	21.3	21.3	0.0	0.0	9.4	9.4	68.9	47.4	66.8	5.1	44.5	50.3	22.8	53.8	100.0	100.0
Samoa	WSM	78.0	88.6	88.6	75.3	75.3	68.8	91.7	32.2	66.1	25.4	25.4	49.8	49.8	100.0	100.0	56.0	47.3	64.9	16.3	11.8	4.1	15.1	13.2	83.9	83.9
Yemen	YEM	40.9	34.8	34.8	32.8	32.8	52.2	73.9	0.0	90.5	81.3	81.3	89.8	89.8	99.4	99.4	75.0	47.5	65.9	12.9	68.5	52.1	57.2	89.9	99.7	99.7
South Africa	ZAF	59.7	82.7	82.7	26.7	26.7	55.9	64.9	45.0	69.9	58.5	58.5	56.7	56.7	89.7	89.7	22.7	28.6	39.1	10.2	25.0	28.3	29.9	13.5	10.5	10.5
Zambia	ZMB	57.5	88.2	88.2	37.0	37.0	27.4	28.2	26.6	42.7	40.9	40.9	55.4	55.4	27.1	27.1	62.2	53.5	75.5	5.1	63.2	76.0	58.5	52.6	69.1	69.1
Zimbabwe	ZWE	67.8	90.8	90.8	38.6	38.6	63.8	88.1	19.2	50.5	57.6	57.6	42.8	42.8	50.1	50.1	47.8	51.1	71.7	8.4	52.9	66.9	49.6	38.4	38.1	38.1
Mean		50.8	51.5	51.5	46.0	46.0	48.0	51.5	37.3	59.3	46.5	46.5	61.8	61.8	57.7	57.7	52.4	44.8	49.2	28.9	41.0	36.3	32.1	47.3	60.6	60.6
Median		49.5	50.0	50.0	42.1	42.1	46.9	53.7	29.8	59.4	46.8	46.8	66.4	66.4	60.4	60.4	52.6	44.3	43.6	17.3	30.8	24.8	21.3	45.2	63.9	63.9
SD		13.8	24.2	24.2	19.4	19.4	16.5	21.0	25.8	18.5	20.3	20.3	25.3	25.3	35.0	35.0	14.2	17.1	21.4	29.7	25.6	31.8	26.9	26.1	23.1	23.1

Note: L. Eco. res., L. Env. res., L. Soc. res. refer respectively to Lack of economic resilience, Lack of environmental resilience and Lack of social resilience. Ind and Cpt refer respectively to Indicator and Concept. The number (#) associated to each concept and indicator corresponds to the description of concepts and indicators provided in Chapter 3.