

Vulnerabilities? What Vulnerabilities?: The Focus of Multidimensional Indicators¹

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The recurring disruptions (shocks and transitions) that the countries of Latin America and the Caribbean face require policies to reduce vulnerabilities.

Those countries that do not carry them out or are late in carrying them out will probably have less dynamic growth paths or stagnation and recession, both in terms of activity and employment.

They are also likely to get caught in a vicious cycle in which each disruption makes them more vulnerable, making them weaker in dealing with the next disruption.

Unless the absence of reforms is compensated for in some way, by favorable terms of trade, for example.

But which vulnerabilities can be reduced, and which cannot?

Alwang et al⁴ review the state of the vulnerability literature across disciplines. In particular, they focus on the different ways that each field of knowledge has defined and measured vulnerabilities. In all fields, vulnerabilities are related to a probability of decreased well-being relative to a certain threshold. However, each discipline focuses on the risks and well-being dimensions most closely related to its object of study. With the exception of disaster management and environmental science, most fields focus on outcomes associated with risk events rather than responses to risk.

In their article, Alwang et al. argue that most disciplines are conceptually strong and empirically weak, or empirically strong and conceptually weak.

¹ The opinions expressed in the article are the sole responsibility of the authors and do not commit the OAS.

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⁴ Alwang, J., P. Siegel and Jorgensen, S. (2001): "Vulnerability as Viewed from Different Disciplines" Social Protection Discussion Paper Series, The World Bank, Washington D.C.

This dilemma between conceptual precision and an empirical approach stems from the multidimensional and complex nature of the phenomenon.

A) How can vulnerabilities be identified?

A first form of approach by different organizations has been the analysis of the **different dimensions** that encompass vulnerabilities and capacities for the purpose of constructing **Multidimensional Indicators**. In recent years, many academics and many Organizations have been developing Multidimensional Vulnerability Indicators (MVI). Assa and Meddeb (2021)⁵ construct an MVI for the UNDP, which "can be used to assess the eligibility of countries for concessional financing" in a way to break with the current Gross Domestic Product (GDP) criterion and show that small islands are more vulnerable than what GDP reflects.

The authors take 11 indicators that they group into 4 dimensions:

Economic Vulnerability Dimension

1. Concentration of merchandise exports
2. Instability of Exports
3. Instability of agricultural production

Financial Vulnerability Dimension

4. International tourism receipts (percentage of total exports)
5. Personal remittances received (percentage of GDP)
6. Foreign direct investment, net inflows (percent of GDP)

Environmental Vulnerability Dimension

7. Share of agriculture (as well as fishing, forestry and hunting) in GDP
8. Victims of disasters

Geographic Vulnerability Dimension

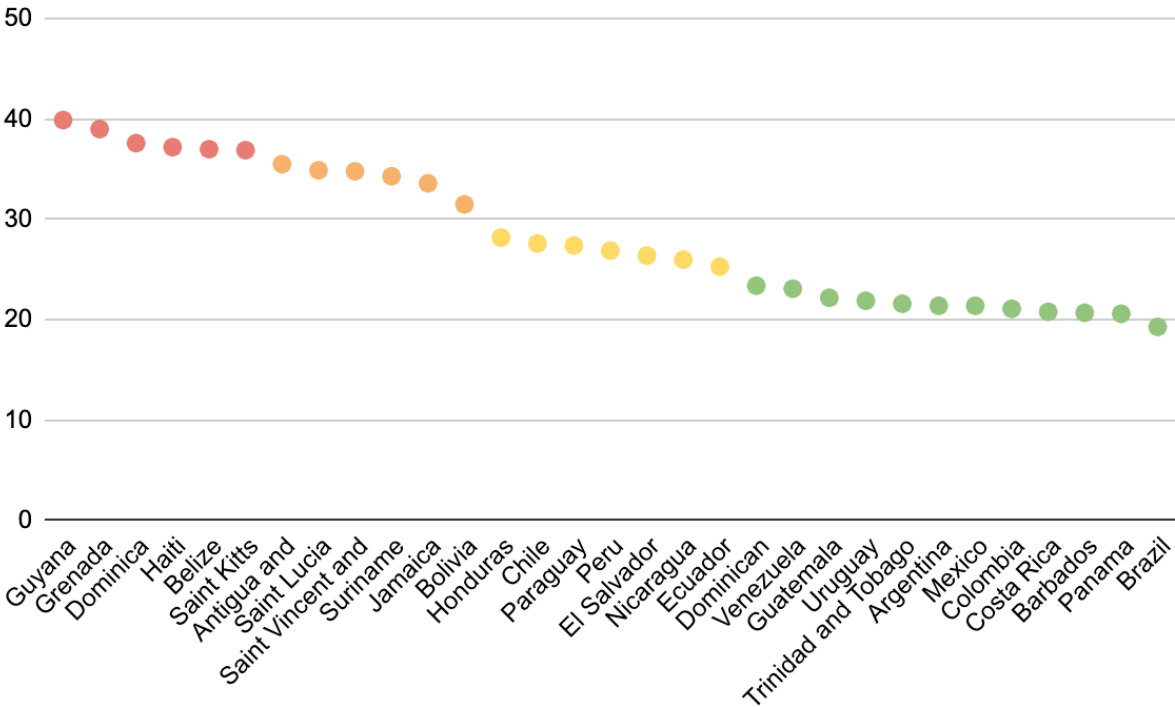
9. Remoteness and landlocked
10. Proportion of the population in areas of high low coast
11. Proportion of population living in drylands

⁵ Jacob Assa and Riad Meddeb (2021): Towards a Multidimensional Vulnerability Index [UNDP-Towards-a-Multidimensional-Vulnerability-Index.pdf](#)

As can be seen, the UNDP MVI can not only be useful as an alternative criterion to GDP for access to financing under preferential conditions, but also to identify public policies to reduce vulnerabilities.

Using the data from the MVI of UNDP, the OAS carried out a grouping exercise (clusterization) on 31 OAS member states, which allows us to explain how each group (cluster) is formed and what characterizes each group from the point of view of the components of the same index.

Figure 1. Clusters MVI OAS Member States



From the point of view of the dimensions, or components, of the UNDP MVI, different factors explain belonging to the different clusters.

The countries grouped in cluster 4, with the highest vulnerability (Guyana, Grenada, Dominica, Haiti, Belize and Saint Kitts and Nevis), share some characteristics:

1. high dependency on foreign direct investment;
2. high dependence on the tourism sector, and
3. high dependence on remittances.

Cluster 3 (Antigua and Barbuda, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Jamaica and Bolivia), shows a

1. medium-high dependence on the tourism sector,
2. medium-high dependence on direct foreign investments, and
3. a moderate dependence on remittances.

Other explanatory factors also include issues of the economic component, such as concentration of exports, as well as geographic and environmental factors (as is the case in Bolivia).

Cluster 2, of medium vulnerability (Honduras, Chile, Paraguay, Peru, El Salvador, Nicaragua, Ecuador) is heterogeneous. It shares some characteristics according to the vulnerability model, such as

1. geographical factors and remoteness (in the cases of South America) and
2. dependency on remittances or
3. risk of displacement of people (in the cases of Central America).

The countries grouped in the cluster of lower multidimensional vulnerability (Dominican Republic, Venezuela, Guatemala, Uruguay, Trinidad and Tobago, Argentina, Mexico, Colombia, Costa Rica, Barbados, Panama, Brazil) have an even greater degree of heterogeneity, although the reduced vulnerability is mainly explained by economic factors and low financial dependence.

For countries like Mexico or Brazil, healthy economic and financial factors, with a high degree of diversification, explain the ranking, with the environmental component (drought risk) constituting a moderate weakness.

In Costa Rica, moderate flows of investment and tourism, and good agroecological practices explain resilience.

In cases like Guatemala, for example, vulnerability is explained by high dependence on remittances, and environmental vulnerability, despite favorable economic factors.

In the case of Uruguay, with low vulnerability, geographic factors (such as distance) are considered as the only variable in red.

There are some paradigmatic cases within this cluster. In the case of Venezuela, for example, almost zero dependence on tourism, foreign direct investment or remittances is measured - which results in a low assessment in terms of financial vulnerability according to the UNDP MVI metric. Similarly, Argentina has few financial links (low tourism, remittances and investment).

As the purpose of the Indicator is related to showing the importance of vulnerabilities for preferential access to financial conditions by international credit organizations, the MVI basically reflects factors inherent to smaller countries (dependence on foreign investment) or historical-structural factors that are difficult to change in the short term (dependence on tourism, dependence on remittances).

However, the clustering exercise carried out in the OAS makes it possible to highlight the need for policies of structural change, of export diversification, which allow for the reduction of the weight of tourism and remittances in income from abroad.

But there are also other indicators of vulnerabilities that can provide elements for the formulation of public policies.

Ram et al.⁶ work on a Multidimensional Indicator based on the work of the Caribbean Development Bank, focusing on the structural characteristics of small States, which make them more vulnerable to shocks compared to larger States.

The paper notes that "These structural features are independent of a country's political will or policy-induced factors and, therefore, are not the result of **recent** government policy decisions." (emphasis added)⁷

In said work, economic vulnerabilities in small states are associated with factors inherent to the countries and historical-structural characteristics such as:

- a. remoteness from world markets;
- b. lack of diversification;
- c. dependence on external financing;
- d. susceptibility to natural disasters;
- e. small internal markets and lack of economies of scale; and
- f. dependence on non-renewable energy sources."

Of the structural factors mentioned, those that we believe can be addressed through public policies are the lack of diversification and the dependence on non-renewable energy sources.

⁶ Ram J., Cotton J., Frederick R. and W. Elliot: "Measuring Vulnerability: A Multidimensional Vulnerability Index for the Caribbean

⁷ El énfasis agregado en "recientes" pone de manifiesto que hay algunas de esas características estructurales que sí pueden ser objeto de políticas públicas, pero que demandan un horizonte temporal quizás mayor al del siguiente shock.

The authors also add in their Indicator proposal, the social dimension in which they incorporate measures of social vulnerability of the countries such as indicators of health, education, gender equity, poverty and crime. All these variables respond to areas of possibility for State action.

According to this Indicator, in 2017 none of the Caribbean countries analyzed was in the low vulnerability group, Haiti was the country with the high vulnerability category, and the rest of the countries were categorized in “medium low vulnerability” and “medium high vulnerability.”

B) What vulnerabilities can be reduced?

This focus on Vulnerabilities through Multidimensional Indicators leads to reflection on the type of vulnerabilities that a country can present:

a. **Vulnerabilities inherent to the country, on which action cannot be taken:** geographic factors (island states, far from global markets), size factors (reduced internal market, which leads to problems of scale for the development of activities that require a certain critical mass or diversity of specializations).

b. **Historical-structural characteristics on which it takes time and is costly to act:** diversification of exports in products and markets, change in the energy matrix, reduce dependence on Tourism and Remittances, reduce the weight of the commodities sector. This point is particularly important.

The pandemic has deepened existing vulnerabilities for millions of small producers and agricultural workers, intensifying uncertainty for much of the population.⁸

Threats at the international level, on the supply side, and on the demand side, pose risks to international agricultural trade.

International threats include (a) commodity price volatility and (b) foreign exchange fluctuations. Threats on the supply side include (a) reduced supply of workers, (b) disruptions to logistics and transportation, (c) domestic price volatility, and (d) trade policies that restrict import/export of goods.

⁸ FAO / CEPAL, Analysis and Responses of Latin America and the Caribbean to the Effects of COVID-19 on food systems, bulletin 2 (Apr, 2020)

Demand-side threats, such as (a) disruptions affecting access to essential products, (b) reduced purchasing power, (c) economic slowdown, (d) unemployment, and (e) increased poverty and inequality also play a role.

For risks such as those listed for agricultural trade, some possible documented policy responses include: digitizing bureaucratic and other procedures, including e-commerce; use of ICTs to improve logistics and others.⁹

The differences in vulnerability between the rural and urban population are relevant in the design of adequate policies. Rural areas have particular characteristics that require differentiated responses and are particularly vulnerable to the effects of shocks due to factors such as informality, concentration of poverty, lower social protection, and seasonality. In this context, special emphasis needs to be placed on children.¹⁰ The rural areas of our region are affected by poverty rates that exceed 48%. This makes it essential to understand the challenges small farmers face.¹¹

c. Complex problems that require strengthening the State, civil society and the relations between the two in order to act on access to civil and political rights and economic rights: education, health, poverty, equity.

Inequality and poverty have increased after the pandemic in the region and generally increase after each shock. Vulnerable populations, such as the population in chronic poverty, have been experiencing the exacerbation of multiple deprivations not related to income: overcrowding, lack of access to water and sanitation, difficulties in following epidemiological recommendations to prevent contagion during the pandemic, stressful situations including domestic violence and child abuse, service interruptions that disproportionately affect the poor population (access to food, health care, schooling, and early childhood services). Socioeconomic impacts are unevenly distributed across quintiles: losses tend to be greater for the moderately poor, the vulnerable, and the middle classes.¹²

Failure to take into account, in the vulnerability analysis, institutional weaknesses and governance weaknesses that do not allow States to ensure equitable access to rights in preferential access to external financing for the

⁹ FAO / CEPAL, Analysis and Responses of Latin America and the Caribbean to the Effects of COVID-19 on food systems, bulletin 3 (May 2020)

¹⁰ FAO / CEPAL, Analysis and Responses of Latin America and the Caribbean to the Effects of COVID-19 on food systems, bulletin 7 (Apr 2020)

¹¹ IDB, Challenges to family agriculture in the context of COVID-19, (June 2020)

¹² University of Tulane, Short and long term distributive Impacts of COVID-19 in América Latina, (November 2020)

reduction of vulnerabilities is to condemn vulnerable countries to greater inequality within countries.

Incorporating complex problems in the analysis (item c) implies incorporating response capacity in the analysis, it implies extending the analysis from vulnerabilities to resilience.

But it also implies recognizing **institutional weaknesses, governance weaknesses, factors that can be associated** with the **fragility** of States.¹³ The most fragile states are also states that are most vulnerable to shocks.

¹³ See for example: [Avoid a Fall or Fly Again: Turning Points of State Fragility \(imf.org\)](#) "While there are many ways to define fragile countries, reflecting its complexity, they seem to have common characteristics. These include: (i) significant institutional and policy implementation weakness; (ii) a fractious political context; (iii) severe domestic resource constraints; and (iv) high vulnerability to shocks."; "In most of the academic studies, states are considered as fragile when their weak institutional capacity, political instability and weak governance severely limit the state's ability to guarantee security to its citizens and deliver basic public services"