

Enhancing Environmental Sustainability Through the Environmental Sustainability Gap (ESGAP) Framework in Colombia

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PITCH

We encourage Colombian policy-makers and stakeholders to leverage the detailed insights the Environmental Sustainability Gap (ESGAP) framework provides to refine and strengthen environmental policies. The ESGAP reveals sustainability vulnerabilities in areas such as forest management, CO₂ emission reduction, water and air pollution, ecosystem health, and protection of natural heritage. Prioritising such areas for policy action by integrating ESGAP findings into national strategies and action plans will enhance Colombia's ability to meet its international commitments and advance its national goals for sustainable development.

ISSUES

Despite significant efforts, Colombia faces pressing environmental challenges. The ESGAP framework offers a tool that provides targeted and actionable data to inform national sustainability policies that align with science-based environmental standards. This tool is crucial for Colombia as it shows

in which environmental areas Colombia performs well and in which ones more action is needed. ESGAP's comprehensive insights can guide Colombia toward more effective and targeted environmental strategies aligning with national goals and international sustainability commitments.

METHODS

ESGAP is a comprehensive indicator framework that monitors a country's environmental sustainability. It combines a suite of environmental indicators into clear, quantifiable metrics that inform policymakers about current performance against science-based standards of environmental sustainability, as well as about progress towards them.

ESGAP comprises two headline composite indicators: the Strong Environmental Sustainability Index (SESI), which assesses how far a country is from achieving environmental sustainability, and the Strong Environmental Sustainability Progress Index (SESPI), which indicates whether a country is moving towards or away

from a sustainable state, and whether it will achieve such a state by a certain date. These tools are designed to highlight specific areas where policy interventions are needed for environmental improvement.

ESGAP uses scientifically validated environmental standards to measure current environmental performance. This approach contrasts with other frameworks like the Sustainable Development Goals (SDGs), which do not sufficiently reflect the state of the environment nor integrate science-based standards into their indicator set^[1]. ESGAP's transparent scoring system, ranging from 0 to 100, makes it easy for policymakers to understand and communicate the gap between the current state of the environment and environmental sustainability conditions^[2].

ESGAP was developed from over two decades of scientific research and successfully piloted in various countries. This initiative was born out of a need for a clear, actionable, and scientifically validated framework that could directly influence environmental policy and management at a national level^[3].

[1] Measuring Progress: Environment and the SDGs. UNEP – 2021 – UN

[2] Usubiaga-Liaño, A., Ekins, P. (2021). « Time for Science-Based National Targets for Environmental Sustainability: An Assessment of Existing Metrics and the ESGAP Framework. » *Frontiers in Environmental Science* 9.

[3] Usubiaga-Liaño, A., Ekins, P. (2021). « Monitoring the Environmental Sustainability of Countries through the Strong Environmental Sustainability Index. » *Ecological Indicators* 132: 108281.

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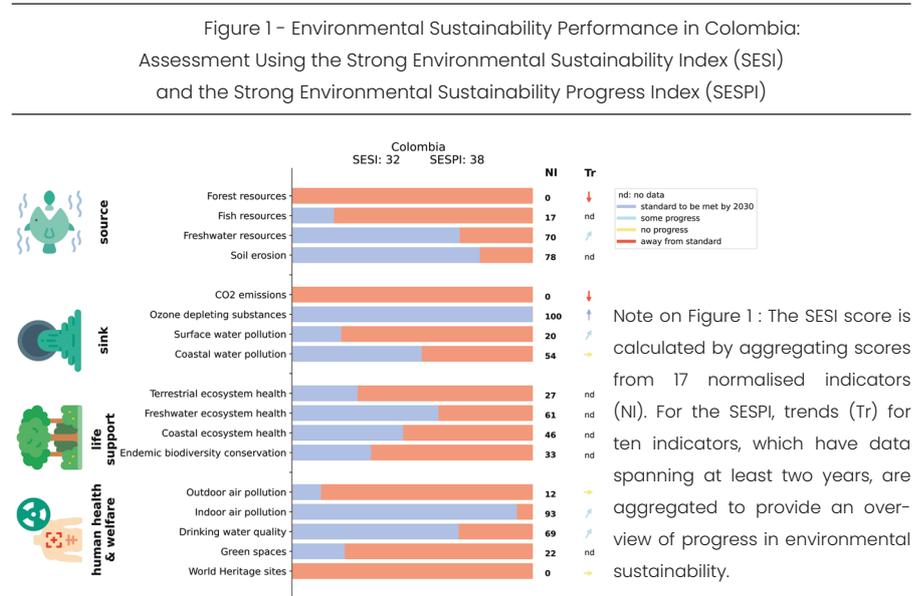
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RESULTS

The Colombian ESGAP framework utilises 17 science-based indicators adapted to measure the country's environmental sustainability. These indicators are normalised on a scale from 0 to 100, with 100 indicating the achievement of sustainability standards. **Colombia's overall SESI score stands at 32 out of 100, highlighting significant areas for improvement.**

Notable successes include reducing ozone-depleting substances (99.9) and high usage rates of clean cooking fuels (93.3), a proxy for severe exposure to indoor air pollution. These scores demonstrate Colombia's strong performance in these areas, closely aligning with global sustainability targets and indicating significant reductions in indoor air pollution risks. However, **the framework identifies several critical vulnerabilities needing urgent attention**, including the extraction of forest resources (0), fish resources (17.4), CO₂ emissions (0), surface water pollution (20.4), and coastal ecosystem health (27.2 and 46.2, respectively), endemic biodiversity conservation (32.8), and conservation of natural World Heritage



sites (0). These low scores reflect substantial gaps in environmental management and policy effectiveness in Colombia. The mixed results in managing water resources and habitat conservation, with some scores like freshwater ecosystem health at 60.8 and soil erosion at 78, suggest partial successes but underscore the need for comprehensive policy interventions to achieve long-term sustainability.

The SESPI, which assesses progress towards environmental standards,

provides mixed results for Colombia. Of the ten indicators evaluated for trends (shown by arrows in the figure above), half show positive developments. Improvements are noted in freshwater resources, ozone-depleting substances, surface water pollution, indoor air pollution, and drinking water quality. Conversely, the other five indicators—forest resources, CO₂ emissions, coastal water pollution, outdoor air pollution, and conservation of natural World Heritage sites—show either no improvement or deterioration.

RECOMMENDATIONS

- ▶ **Expand Successful Initiatives:** The government should expand successful initiatives in areas where Colombia has shown significant success, such as reducing ozone-depleting substances and increasing the use of clean fuels for cooking. This could involve scaling successful programs to broader applications or regions and using these models to inspire similar initiatives in other environmental areas.
- ▶ **Reassess and Enhance Policies in Underperforming Areas:** In areas where environmental performance is lacking, such as forest resource management, ecosystem health, biodiversity conservation, natural World Heritage site preservation, fisheries, air and water pollution, and urban green space accessibility, it is crucial to conduct a thorough evaluation of current policies. Identify the reasons these policies fail to manage the relevant environmental functions sustainably. Based on this assessment, the policies should be revised and updated to enhance effectiveness and adequately address the identified shortcomings.
- ▶ **Enhance Data Collection and Monitoring:** Invest in improving environmental data collection systems, particularly in areas with significant data gaps, such as groundwater resources and chemical pollution in terrestrial ecosystems. This would help accurately assess the state of the environment and the effectiveness of implemented policies, facilitating better decision-making.
- ▶ **Identify and Establish Science-based Standards in Policy:** Establish science-based environmental standards in policy and ensure consistent enforcement across all regions of Colombia.
- ▶ **Regularly Update and Refine Environmental Policies:** Utilise the insights from the ESGAP framework to update and refine policies continuously, ensuring they remain effective as conditions change and new challenges emerge.