

DEVELOPMENT OF METROLOGICAL INFRASTRUCTURE TO PROMOTE ACOUSTIC BIODIVERSITY MONITORING: A CHALLENGE TO STRENGTHEN ENVIRONMENTAL CONSERVATION IN THE AMAZON THROUGH SUSTAINABLE PRODUCTION IN COLOMBIA



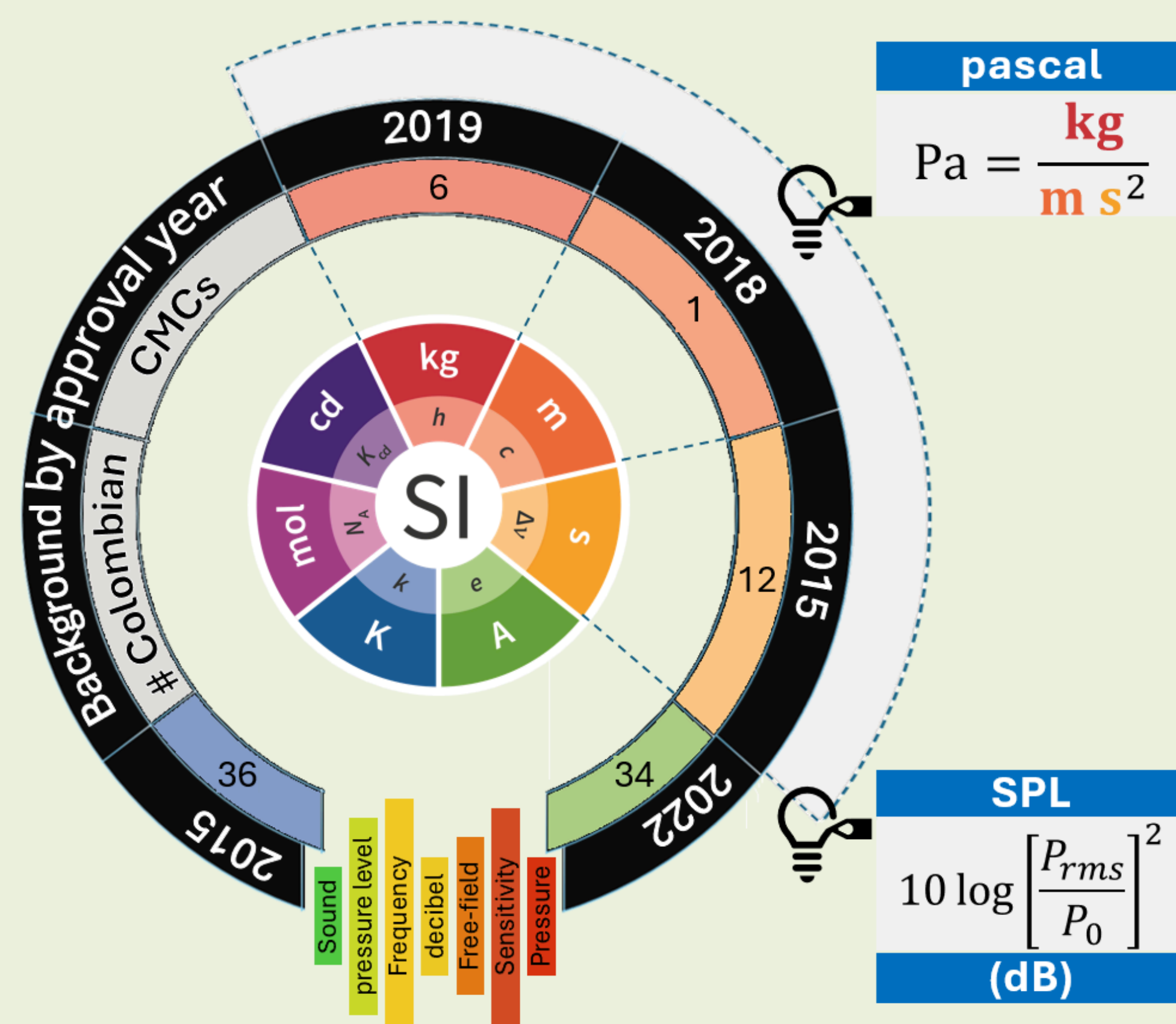
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INTRODUCTION

Accelerated biodiversity loss in tropical regions, such as the Amazon, necessitates the utilization of accurate and standardized monitoring tools. Acoustic monitoring offers a non-invasive assessment of the health of tropical ecosystems; however, the full potential of this method depends on the development of robust metrological infrastructures to promote ecosystem conservation.

BACKGROUND IN COLOMBIA



Progressive approach and associated milestones:

- ✓ **Last 10 years**
International recognition of the INM of Colombia CMCs, highlighting those associated with five of the seven base units.
- ✓ **National challenge**
Addressing acoustic metrology in the country.
- ✓ **Acoustic measurements**
Quantity values expressed using the decibel unit (symbol dB).

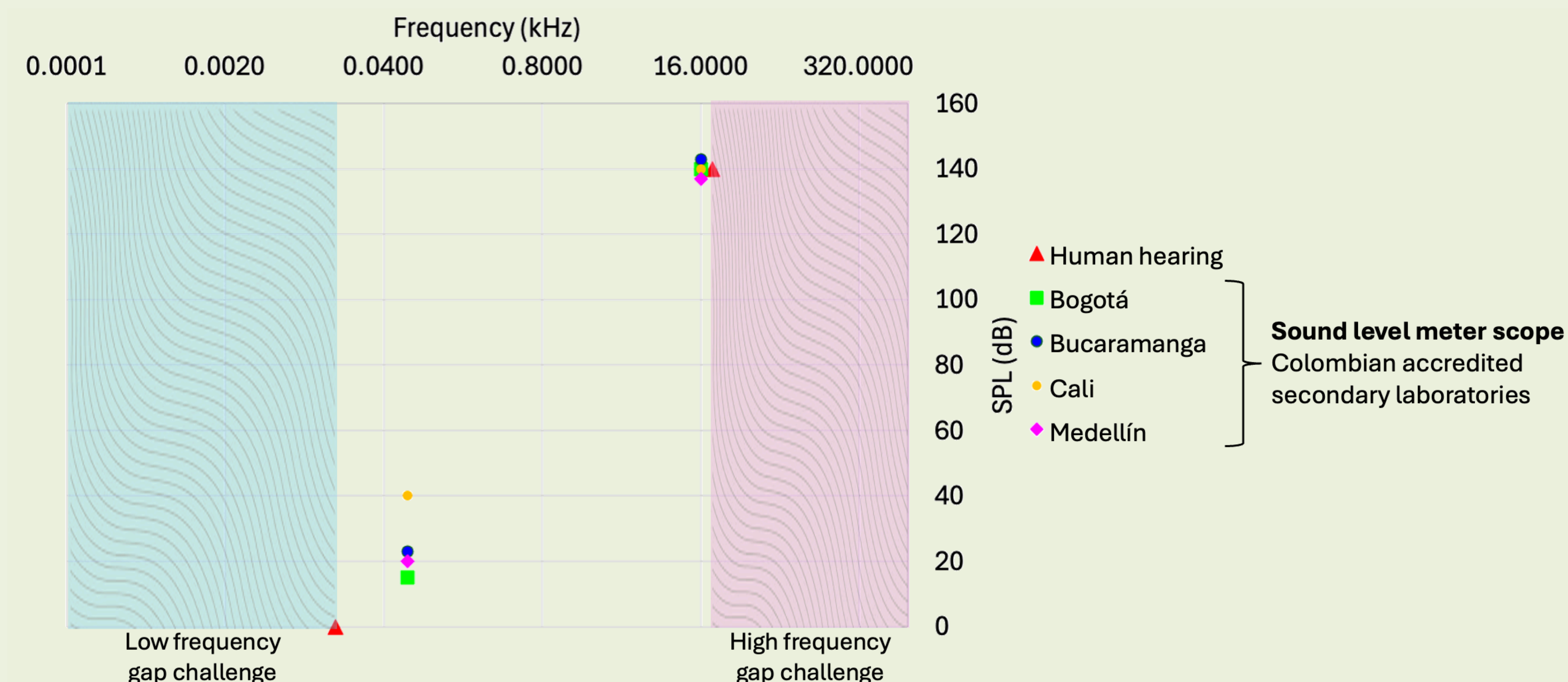
RESULTS

ACOUSTIC MONITORING CHALLENGES



ACOUSTIC INTERVAL SCOPE COMPARISON

(lower - upper limits)



pascal (symbol, Pa)
SI unit with special name and symbol expressed in terms of base units.

decibel unit (symbol, dB)
Non-SI unit accepted for use with the SI units.

Sound Pressure Level (SPL, unit dB)
Ratio of sound pressure and reference sound pressure, logarithmic scale.



CONCLUSION

The establishment of this metrological infrastructure will facilitate the quantification of changes in biodiversity through the use of reliable acoustic indicators. This will provide a robust scientific foundation to inform conservation and climate change mitigation policies. Additionally, it will offer verification tools for productive landscapes that promote the balance between economic development and environmental conservation in Colombia.

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