

Empowering Indigenous Communities for Environmental Management: A Translational Environmental Science Approach in the Amazon Basin

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Illegal gold mining in Colombia has raised significant concerns due to its severe impact on environmental and human health, particularly affecting major rivers like the Guainía in the Amazon Basin. Indigenous authorities have expressed alarm over the potential harm to their community's health due to mining pollution, particularly mercury. The remoteness of the area, accessible only by boat, means there is a lack of analytical infrastructure and regular environmental monitoring programs by the Colombian government. This project aimed to confront the pressing environmental health crisis through a collaborative effort involving researchers, Etnollano NGO collaborators, and the affected Amazonian communities. Utilizing the translational environmental science approach, we strived to bridge the gap between fundamental science and its practical applications, policy implications, and accountability (e.g. Kaufman & Curl, 2019). To do so, it was key to empower the community to actively participate in identifying water quality issues, potentially enabling them to trace primary contamination sources and take their own management and regulatory decisions. Fully engaging with indigenous peoples on environmental issues has proven to be crucial in terms of knowledge of local ecosystems and sensitive sites, biodiversity management, development of environmental values within the population, and support in environmental monitoring programs (e.g. Boiral et al., 2020). We deployed user-friendly, eco-conscious 4-channel water probes that are portable and can be used by non-technical users (Pérez-López et al., 2023). We also fostered water education through informal presentations and infographics, targeting all community levels. The data collected by the community, combined with the engagement program, were crucial for informed decision-making and action-taking by the indigenous authorities.

References:

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