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Developing an Air Quality and Ecological Monitoring Network in Georgia

This research focuses on the creation of a new nationwide air quality monitoring network in Georgia. It was designed to solve a problem with existing government stations, which are too limited in number and don't provide detailed enough data. This new network gives us important, local data that is essential for assessing environmental health and for developing new policies. As a key contributor, I worked with the environmental NGO Green Pole and the Czech organization Arnika. I was involved in the assembly, calibration, and deployment of over 100 ISO-certified "CO meter"sensors. These devices measure pollutants like NOx, VOC, PM1, PM2.5, and PM10, as well as temperature and humidity. We strategically placed them in cities, industrial areas, and rural sites in 16 cities of Georgia, with real-time data available to the public on Green Pole's online platform.

To complement these measurements, I am also collaborating with professors from the Warsaw University of Life Sciences. We are collecting leaf samples from tree species common to both Georgia and Poland, right next to our sensors in Tbilisi, Kaspi, Mtskheta, and Rustavi. This allows for a unique cross-country comparison. The lab analysis in Poland will measure things like microplastic deposition and other pollutants on the leaves, which directly links our air data to its effects on nature. This project creates a strong scientific foundation for understanding air quality in Georgia. Additionally, I have been involved in other forestry projects, including determining wood density and assessing the conservation status of woody plants. This demonstrates my commitment to a broad range of environmental research.

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