



# Bajemos los decibeles (Let's lower the noise)

## Detection of noisy environments..

### Objectives

#### Overall goal:

- Articulate an extension practice that strengthens open collaboration in the study of everyday phenomena and research, among researchers and citizens, especially youth.
- Measure environmental noise in different areas of the province of Tucumán that help determine the degree of noise pollution of the environment in which people develop their activities.
- Identify the level of noise in school and health environments to raise awareness of how much it can impact the health of people and animals, among other others.

#### Specific goals:

- Promote a scientific and collaborative analysis of the environment of activities such as teaching and health to identify noise pollution and then expand the scope of study.
- Develop the ability to make the results obtained through research available to the community.
- Encourage the interpretation of the data collected and generate the appropriate space for discussion and exchange of ideas among different actors.
- Train for the presentation of reports to public agencies in charge of environmental decision-making and impact on society, such as municipal and provincial governments.
- Promote collaboration with other organizations, networks, and associations to monitor and care for the Tucumán environment.
- Make an approach to the cultural identity of the region from a sound perspective, that is, to identify those sounds that are typical of the region (from birdsong to business noises), in order to integrate sound to the urbanistic view of an area.

### Description of citizen participation

This is a proposal and part of it is in process, so some steps may change depending on previous studies.

#### Measurements:

- First, students from primary and secondary schools discuss, analyze, and conduct a noise pollution measurement protocol organized by researchers from the National University of Tucumán. The measurements will be conducted with cell phone applications suitable for this purpose that allow measuring sound levels and geolocation. Once the measurement is generated, the data is uploaded to a map that displays the data on a web page.
- The information is completed with a survey of the population of the study area (problematic areas from the point of view of noise in the microcenter of Tucumán, which will allow a first approach to the design) invited to participate through a web page. With the data obtained, students from secondary schools in the province participate in a first analysis.
- The proposal begins with the participation of students from high schools in the province of Tucumán and then will be offered to the community in general.
- After the entire process, a report will be prepared and presented to university and municipal authorities. If the participating citizens assess that the problem is serious (based on available legislation, for example), the process of proposing solutions at the municipal level begins.

### Type of citizen science project

- Collaborative project: Citizens participate in data collection and analysis.



#### Participating parties.

- Research teachers at the National University of Tucumán (UNT in Spanish), who participate in different research projects.
- University students from Exact Sciences, Arts, and Cinema disciplines and high school students from pre-university schools of the UNT.
- Board of Experimental Schools from the University.
- Fundación Cultura para Todos (Culture for All Foundation).

**Status.** Under design.

**Time frame.** 01/03/2022 - N/A.

**Frequency of project execution.** Don't know/No answer.

**Participation period.** Sustained over time.

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Tucumán.

**Project development members.** It has been developed with the collaboration of both scientists and participants without formal training.

**Number of participants.** From 1 to 50.

#### Action/s involving citizen participation.

- Problem definition.
- Data collection.
- Phenomenon monitoring.
- Solution planning.
- Solution deployment.

#### Technological device/tool required.

- Cell phones to detect noise levels and locate them geo-referentially.

**Recruitment methods.** For the purposes of design participation, UNT institutional communication channels and facilities will be used for meetings. When the project is ongoing, colleges and schools will be used as convening venues.

**Replicability.** It has not been replicated yet.

**Scalability.** It has not been upscaled yet.

**Open access to data.** The maps generated with the data inputs will be open and interactive, allowing access to audio files and geo-referencing data. Each of the maps will contain different information for each analysis zone.

**Feedback.** Several feedback meetings will be held where participants will be able to express their doubts, suggestions, and practical solutions.

**Linkage with state agency/government.** No.

**Institutional funds.** The project was approved by the UNT Extension Secretariat, without budget. It is currently seeking subsidies from various sources.

**Awards/distinctions.** No.

**Comments.** -

#### Knowledge areas/disciplines (OECD)

**NATURAL AND EXACT SCIENCES** / Physics.  
**NATURAL AND EXACT SCIENCES** / Earth and environmental sciences.

#### Leaders.

Walter Diaz, research professor at UNT and director of a research project.

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