# AQUAtox© 2000: The International School Network on Water Toxicity

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[Photo: AQUAtox participants in Ecuador.]

In the Andean city of Ibarra, Ecuador, students from local schools uncovered evidence of bacterial contamination in the piped water system serving one of the 'barrios' (neighbourhoods). During a community meeting, the residents were surprised by these results, but even more surprised to learn from municipal water authorities that they were receiving untreated water, due to rapid urban growth and limited funding. To avoid future public health problems, the water authorities took this opportunity to inform community members about the need for household and environmental hygiene measures to protect their health.

In the State of Morelos, Mexico, teachers and students worked closely with the Mexican Institute of Water Technology to monitor the water quality of the Cuautla and Ayala rivers, which are used by local farmers for irrigation. The project generated information useful for the community, scientists, and students. Together, these groups are now lobbying nearby factories to improve their environmental practices, and are lobbying state authorities to enforce existing pollution regulations.

**Household wells**

In Bobo Dioulasso, Burkina Faso, elementary school students tested water drawn from household wells in their community. To their surprise, the results showed that some of the wells are contaminated and the water is not fit for drinking.

These stories illustrate a few of the impacts of the AQUAtox© 2000 project, an initiative launched by the International Development Research Centre (IDRC) in 1998. Under this project, students from more than 90 schools in Canada, Africa, Asia, Latin America, and Europe have learned how to use simple and inexpensive water quality tests to detect chemical and microbial pollution in water samples taken from their local environment.

**Simple bioassays**

Developed and validated by WaterTox — an international network of water quality laboratories, which is also funded by IDRC — the AQUAtox© water quality bioassays make use of readily available materials and supplies, such as onion bulbs, lettuce seeds, and fresh water organisms, says Gilles Forget, Team Leader of IDRC's Ecosystem Approaches to Human Health program initiative. Despite their simplicity, the AQUAtox© tests introduce students to a broad range of subjects including basic statistics, botany, zoology, microbiology, ecology, geography, and the design of scientific experiments.

Among its objectives, AQUAtox© 2000 aims to:

- help school children understand — through practical scientific experiments — how important it is to protect water resources in their own communities and the world;
- involve students in thinking about environmental protection, sustainable development, and the health and social implications of water quality in their communities and the world;
- develop and implement an electronic network of young researchers, providing an international forum for dialogue about environmental issues and priorities; and
- give science teachers an opportunity to carry out, with their students, a project that is practical, crosses scientific disciplines, and relates to the health of humans and ecosystems.

**AQUAtox© website**

AQUAtox© 2000 links participating students and their teachers with the WaterTox scientific team via the IDRC website. To encourage regular postings of water testing results, IDRC and other sponsors organized a contest earlier this year in which five out of 70 eligible schools were awarded an all-expenses paid trip to Ottawa in May — for one teacher and two students.

Every time a given school posted two full sets of microbiological and chemical measurements on the AQUAtox© 2000 Internet site, they earned a raffle ticket and were eligible for the draw, explains Forget. The more results posted by each school, the greater their chance of winning.

**Winning teams**

The winning teams included Thomas Simpson School in Northwest Territories, Canada, Escuela Primaria Lidia Doce Sanchez in Cuba, Colegio Morelos de Cuernavaca S.C. in Mexico, Chandra Giri Vidayashram High School in Nepal, and Lyceum No. 157 in Ukraine. The AQUAtox© program taught me that clear water can be polluted, says one of the Nepalese contest winners. She adds that it enhanced the status of females in her village by showing that young women can perform a valuable service like water testing.

According to Aleksei Antonov, a 15-year-old Ukrainian, students at his school tested water from ponds, local wells, and household taps. The tests revealed that our tap water can be used for drinking, but only after it has been filtered, he says.

Due to the success and demand of this initiative, IDRC has renewed the AQUAtox© project for another year, in partnership with the Biosphère in Montreal.

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Sidebar: Water Facts and Statistics

Detecting the Presence of Waterborne Chemicals: Alternative Water Tests for the South, by John Eberlee and Jennifer Pepall

Indigenous Peoples Test the Waters, by Neale MacMillan

Portable Water-testing Kit