
Case Study: Water, Waste and the Warao

The Warao are an Amerindian Indigenous People living in Venezuela's Orinoco Delta región, as well as in Trinidad and Tobago, Guyana, and Suriname. The word Warao means 'boat people', indicating the Warao's deep physical and cultural connection to water. Many Warao children swim before they can walk. They later learn the craft of building *bongos*, large dugout canoes used for transportation and fishing.



"Nobotoma Kokotuka" Bilingual Intercultural Education Unit, Warao Indigenous Community, Riviera sector. Guayana City Caroní Municipality Bolívar state. Venezuela

Water is not taken for granted by the Warao people. Their life depend upon it. If the water of the Orinoco Delta becomes contaminated by pollution and waste, Warao lives will be threatened. Consumption of unhealthy water, for example, causes diarrhea, a condition particularly threatening to children.



The *Nobotoma Kokotuca* ('All Children at School') unit of Venezuela's Bilingual Intercultural Education program offers workshops on water for Warao children. The school is attended by the children between the ages of 6 and 12. Young Indigenous teachers instruct in both the Spanish and Warao languages.

The children learn that *Jo omi oko warao tuma equidakuna* (without water the Warao cannot live). Children further learn that *jumamokomoko tuma* (worms) and *jebumokomoko tuma* (bacteria) live in *jo moniajeja* (dirty water). Along with learning how to properly wash their hands and maintain cleanliness, children discover simple and economical techniques for treating and disinfecting water. These methods include chlorinating, filtering, and Solar Water Disinfection Method (SODIS).



Changes in water use and sanitation can be slow in the Warao community. It is never easy for anyone to change habitual practices. However, children from the *Nobotoma Kokotuca* school are 'information multipliers'. That is, with their new knowledge and enthusiasm, the children of the Warao community are the best ambassadors for good habits. When others follow the example of the children, measures can be taken within the tribe as a whole to improve water use and sanitation methods and reduce the incidence of diarrhea among children and elders.

-  Science is a vital contributor to the knowledge needed in the Warao community. How and why? How does science contribute to environmental knowledge in your community?
-  What ethical issues do you see as important to keep in mind when thinking about water and waste in the Orinoco Delta? What ethical issues around water and waste exist in your community?
-  Would you say that attention to Warao cultural-spiritual values contributes to clean water in the Orinoco Delta? Explain. Does your community associate any cultural-spiritual value to water?
-  Would you say that education like that given in the *Nobotoma Kokotuca* is an 'environmental action'? Explain. Are there environmental actions in your community that focus on water?