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# Introduction of the Electrolysis of Brine for the Supply of Drinking Water to a Marginalized Population

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## Abstract

In our country the Institute of aqueducts and sewage systems, is responsible for providing all the Panamanian population drinking water. However the communities with less 1,500 inhabitants are handled by the Ministry of health, by the so-called rural aqueducts; which are managed by the communities themselves. Most of these rural aqueducts operate with many deficiencies. Thus the availability of drinking water to rural populations is very insecure. Preceding this reason exposed, and analyzing different methods of disinfection for drinking water especially for rural areas, we select the electrolysis of brine, as a good alternative; already this method as well as low cost of maintenance and operation, requires raw salt, or sea water; what is available anywhere in one way or another to produce hypochlorite of sodium, generated by electrolysis. Through the introduction of the process of electrolysis of brine, which operated using renewable energy sources (photovoltaic), being this self-sustaining, especially for hard to reach places. Generated potable water for consumption, and food preparation. The water obtained complies with the regulation technical DGNT-COPANIT 23-395-99, for drinking water. We empower the community with this project, to generate themselves the disinfectant of sodium hypochlorite, resulting this in a social innovation project. The project counted with the collaboration of the technical staff of the laboratory of Industrial analysis and environmental sciences of the Experimental Center of engineering at the Technological University of Panama. And it was endorsed and financially supported by the National Secretariat for science, technology and innovation.

**Keyword:** Electrolysis of brine,, sodium hypochlorite, photovoltaics, drinking water,, marginalized population,, disinfection, rural population, rural aqueducts, line base, self-sustaining