

The latitud water program: The interlinkage of water and sustainability research and capacity building, through synergistic international collaboration

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Abstract

The Latitud – LATU Foundation of the Technological Laboratory of Uruguay (LATU) promotes the sustainable development of the country. Within it, the Water Program, allied to national and international institutions, encompasses academic theses, research services and manages projects financed by own and external sources.

In its Phase I (2014-2018), it developed methods for risk assessment of emerging pollutants and multiresistant pathogens and viruses in watersheds, with an emphasis on the St. Lucia Basin. Currently, Phase II "The Water-Production-Energy-Health Nexus and the Circular Economy as Sustainability Tools, in the Context of the 4th Industrial Revolution and Climate Change" supports the sustainability of productive sectors through an integrated approach addressing point-source pollution abatement, resources valorization, water reuse and energy production. It also deals with diagnostic, prevention, mitigation and remediation projects with a watershed, ecotoxicological and ecosystem health

approach, investigating the efficiency and safety of remediation techniques for aquatic ecosystems restoration purposes, focusing on diminishing eutrophication and cyanobacterial and harmful algal blooms. Its research lines are: Smart (remote and continuous data acquisition probes, modelling), Potable (drinking water safety and quality, new filters and filter materials), Restoration (novel methods for eutrophication remediation), Nexus (water-energy-production-health, circular economy, effluent and sludge treatment methods, resource valorization and water reuse).

Since its start, the Water Program has generated capacity building through graduate and postgraduate theses with experimental phases carried out in Uruguay, providing training in ecotoxicology, water science and technology, among other disciplines. In this conference I will explain the main results obtained in these years of fruitful collaboration.

Keywords: Water quality, circular economy, valorization, Nexus, smart, emerging contaminants.