

Background

Good quality of drinking water is essential to ecosystems, human health, and for social and economic development. Responding to the growing problem of water scarcity, treated wastewater is now commonly used as a reliable water substitute.

In Latin America and the Caribbean (CELAC) over half of the urban population is settled in small to medium-sized cities, with less than one million inhabitants. These often lack adequate facilities to treat wastewater and manage sludge, the by-product of wastewater treatment that contains all substances removed during the process.

Untreated effluents are discharged to the nearest water bodies and therefore rivers, lakes, and coastal waters become heavily polluted. As a result, not only is the environment affected, but also human health and economic activities. With water resources coming under stress, concerns on availability and quality of drinking water are especially alarming.

Promoting sustainable development by providing clean water and access to safe sanitation for all is one of the targets agreed upon by the global community. Many infrastructural projects for water supply and wastewater treatment in CELAC have been undertaken in the past four decades. However, the success of these often large-scale and centrally planned projects is increasingly contested.

Appropriate and locally accepted technical options for wastewater treatment and management of faecal sludge for small to medium-sized cities in the CELAC region are urgently needed.

Partners



United Nations University

Institute for Integrated Management of Material Fluxes and of Resources
Ammonstrasse 74, 01067 Dresden, Germany
Tel.: +49 351 8921 9370 | Fax.: +49 351 8921 9389
Email: flores@unu.edu



flores.unu.edu

Design: Claudia Matthias/UNU-FLORES • Photos: Laura Ferrans/UNU-FLORES, Jorge Cifuentes/University of San Carlos of Guatemala City • Cover Image: Regional School of Sanitary Engineering (ERIS), USAC, WWTP Aurora II, Guatemala City, Zone 13

RESOURCE RECOVERY FROM WASTEWATER IN THE AMERICAS – ASSESSING THE WATER-SOIL-WASTE NEXUS (SludgeTec)

Sponsors



UNITED NATIONS UNIVERSITY

UNU-FLORES
Institute for Integrated Management of Material Fluxes and of Resources



Panajachel wastewater treatment plant (WWTP), Guatemala

Project Description and Objectives

Project duration: November 2017–November 2018

The SludgeTec project supports the achievement of sustainable development by seeking solutions to the complex problem of wastewater management and sewage sludge in Panajachel, Lake Atitlan, Guatemala and Tepeji del Rio, Mezquital Valley, Mexico.

Working in these two regions, SludgeTec aims to bring together international experts and local stakeholders and undertake with them a process of **co-design of a sustainable wastewater treatment and management system**.

To engage stakeholders in the co-design of technical solution options for environmentally, socially, and economically sustainable wastewater management in two pilot locations of the CELAC region

In the long term, to contribute to improving the health and well-being of the inhabitants of small- and medium-sized cities in Latin America

Lake Atitlan, view from Panajachel, Guatemala



Sludge drying beds at the Panajachel WWTP, Guatemala

Method

The objectives of the SludgeTec project will be achieved through innovative participatory tools and a systematic and modular approach:

- i. **Understanding the current context** (environmental, social, economic, legal, and technical) through assessment workshops substantiated by stakeholder, policy, and technical analyses;
- ii. **Enhancing local capacities** through training workshops in the region and in Germany;
- iii. **Collectively developing** and choosing adequate sustainable solution options through an ongoing collaborative process among multiple stakeholders, including local and international academics, communities, and government actors.

Community and local stakeholder involvement in participatory processes for long-term planning and provision of capacity development opportunities are key to ensure sustainable solutions.

UNU-FLORES, with the support of local partners, will conduct stakeholder and policy analyses, through which the local governance context and existing regulatory frameworks may be analysed to better assess the current state of wastewater management in the specific areas of study.



Water samples from research at WWTP Aurora 2 – ERIS, Guatemala

