CEDRIG CLIMATE, ENVIRONMENT AND DISASTER RISK REDUCTION INTEGRATION GUIDANCE

CEDRIG Light

Construction of a water treatment plant and sewer system for the Guaqui town, Department of La Paz / Municipality of Guaqui

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Agencia Suiza para el Desarrollo y la Cooperación COSUDE

Resumen

Información general

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Objetivo general
Improve the current living conditions of Guaqui's inhabitants through the implementation of an appropriate sewage system, benefiting the overall population (perspective for the next 20 years)

País
Bolivia

Presupuesto
Bs. 7.000.000 (approximately USD 1'000'000)

Duración
September 2016 - July 2017 (approximately 10 months)

Resumen

Descripción
Due to the absence of a wastewater treatment plant treatment plant in the Guaqui town, wastewater is discharged directly to Titicaca Lake, causing serious water pollution. Through the construction of a sewage treatment plant, the water pollution will be reduced along with an improvement of the living conditions of the local population. However, as a result of frequent lake level fluctuations, the sewage treatment plant might suffer negative impacts from flooding. In addition, frosts during the cold winter months can affect the plant's main components such as (i) sewage collection network and sewer manhole, (ii) emissary, (iii) pumping sump, (iv) pumping line, (v) treatment plant, (vi) infiltration ditches.

Términos clave
Wastewater treatment system
sewage collection network
emissary
pump stations
lake contamination
Bolivia
Floods
frosts

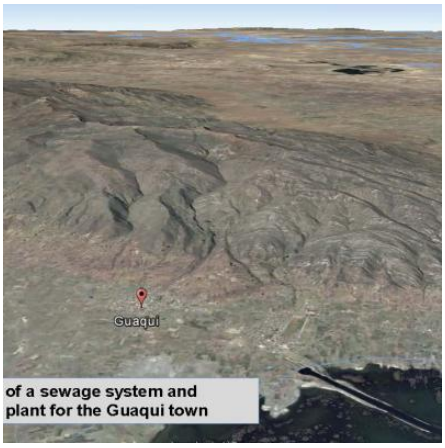
Sectores de Intervención

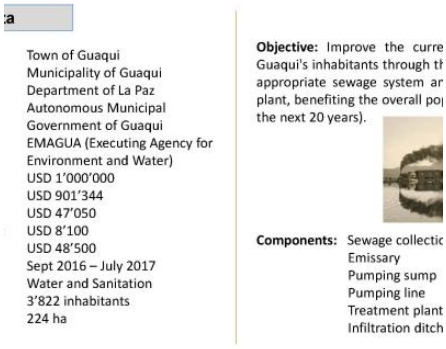
Salud
Agua y saneamiento
Turismo

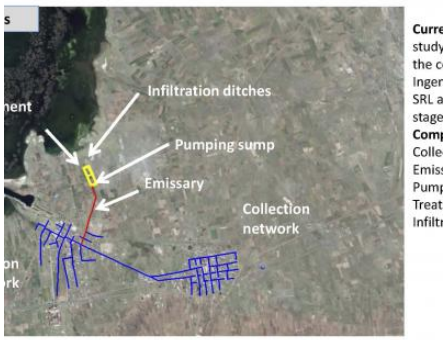
Documentos

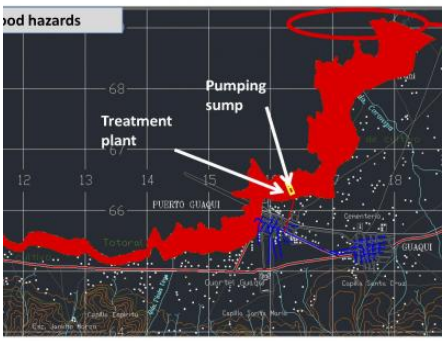
Project information (pdf, 4.97 MB)

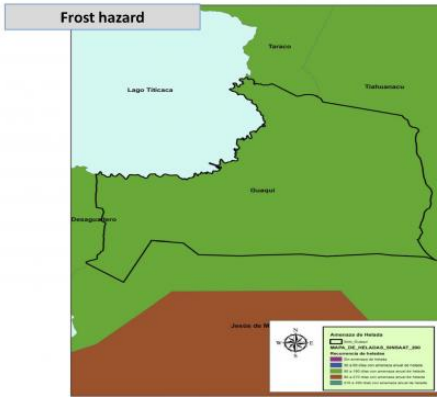
Imágenes

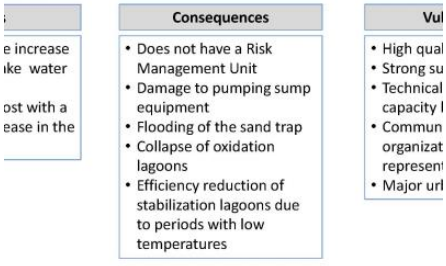


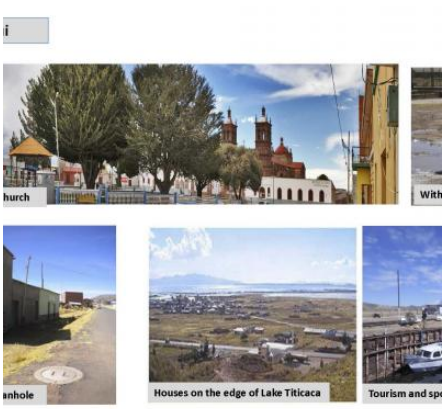








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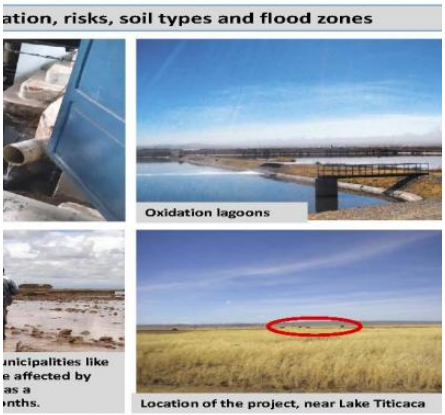
Houses on the edge of Lake Titicaca
Tourism and sp


ation, risks, soil types and flood zones
Oxidation lagoons
Location of the project, near Lake Titicaca


omponents, plant (oxidation lagoons) and pumping sump
Machines of a pumping sump

Perspectiva del riesgo

Amenazas que se producen debido a la degradación del medioambiente

Nombre de la amenaza	Contaminación del agua (superficiales y subterráneas)

Exposición: No está claro

Comentarios: Domestic sewage is untreated and are discharged into the fields/grounds and lake

Consecuencia: **Laminar erosion of contaminated soils and effluent infiltration could result in contamination of surface and groundwaters to the detriment of uncovered populations**

Probabilidad	Alcance	Importancia del riesgo
Improbable	Perjudicial	Riesgo bajo

Nombre de la amenaza	Degradación (tierra, suelo, ecosistemas, biodiversidad)

Exposición: Sí

Comentarios: Altiplano zone with various erosional processes caused by wind (60%) and water (40%), relief with slopes between 2 and 10%.

Consecuencia: **Silting of network, pumping sump and treatment plant**

Probabilidad	Alcance	Importancia del riesgo
Probable	Ligeramente perjudicial	Riesgo bajo

Amenazas naturales (hidrometeorológicas y geológicas)

Nombre de la amenaza	Crecidas repentinas, inundaciones

Exposición: Sí

Comentarios: According to the local hazard map, the water treatment plant is located in a flood prone area. Flood events occurred in 1986, 2002 and 2012. Approximately every 15 years.

Consecuencia

Damage of the wastewater treatment plant components such as pumping sump. Overflow of stabilization lagoons would contaminate crops near the plant

Probabilidad	Alcance	Importancia del riesgo
Muy probable	Sumamente perjudicial	Riesgo alto

Consecuencia

Damage to crops and animal fodder in surrounding areas due to flooding

Probabilidad	Alcance	Importancia del riesgo
Probable	Perjudicial	Riesgo medio

Nombre de la amenaza

Frío extremo

Exposición

No está claro

Comentarios

At the project site, between 90 to 180 days per year with frosts are observed, 3'835 m above sea level, average temperatures around 4°C, minimum temperatures until -10°C. It happens on average every 2 years.

Consecuencia

Problems in the operation of the plant and reduced efficiency of the oxidation lagoons

Probabilidad	Alcance	Importancia del riesgo
Probable	Perjudicial	Riesgo medio

Amenazas que se producen debido al cambio climático (y la variabilidad del clima)

Nombre de la amenaza

Cambios de frecuencia e intensidad de los fenómenos climáticos extremos y desastres relacionados (p.ej. olas de frío y calor, inundaciones, sequías, tormentas, huracanes, ciclones)

Exposición

No está claro

Comentarios

There are variations of extreme temperatures, mainly frost with a tendency to increase in the future

Consecuencia

It could affect the operation and efficiency of the wastewater treatment plant in oxidation lagoons

Probabilidad	Alcance	Importancia del riesgo
Improbable	Perjudicial	Riesgo bajo

¿Evaluación detallada de riesgos necesaria?

Sí - Es necesaria una evaluación detallada de riesgos

Perspectiva del impacto

Calcule el impacto en el medioambiente

Área medioambiental	Agua
Componente de la actividad	Wastewater treatment plant
Impacto sobre el medioambiente	Bad odors from the plant could disturb the surrounding population

Estime el impacto en los riesgos de desastres

Componente de la actividad	Wastewater treatment plant
Nuevo riesgo o riesgo agravado	Could be an incentive for the construction of new settlements in areas at risk from flooding

Calcule el impacto en el cambio climático

Componente de la actividad	Wastewater treatment plant
Impactos en el cambio climático	Greenhouse gas emissions from oxidation lagoons

¿Evaluación detallada de los impactos necesaria?

Sí - Es necesaria una evaluación detallada de los impactos