FEASIBILITY ANALYSIS OF THE UTILIZATION OF CONSTRUCTED WETLANDS IN SMALL HIGH- ANDEAN URBAN AGGLOMERATIONS

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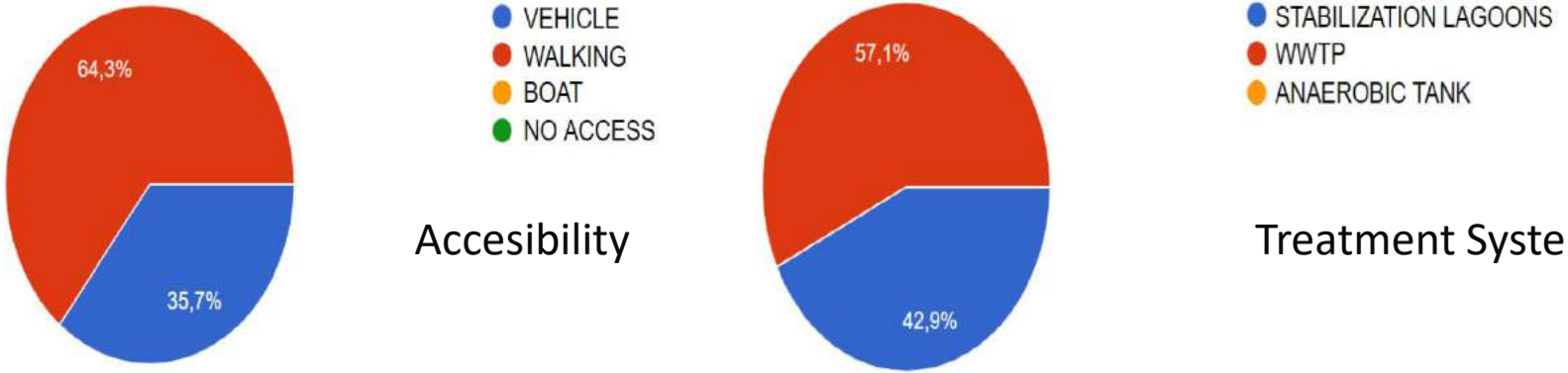
INTRODUCTION

METHODOLOGY

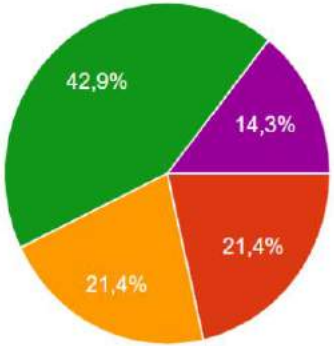
- The research has a quantitative approach, inductive method, non-experimental design. It is transectional. Basic investigation. Descriptive. The population is the same as the sample. It was done next Protocol where the following activities are carried out: First phase: Documentary compilation, (1) Investigations carried out that demonstrate the pollution of Lake Titicaca (2) Investigations on Wastewater Treatment Plants. (3) Coordination with authorities for technical field visits and interviews with Operators / Technicians in charge of the Domestic Wastewater Treatment Plants (DWWTP). (4) Preparation of the instrument, formulary. (5) List of Plants. (6) Control sheets of the number of plants visited. (7) Daily tour schedule. (8) Record of photos and filming of the state of the PTARD. The population is the 14 Domestic Wastewater Treatment Plants, and the sample is equal to the population, as it requires the investigation of the total universe, in order to, individually specify the problems of each one of the DWWTP.

RESULTS

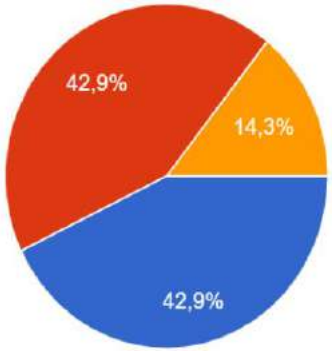
- The obtained results are the summary of the in-situ observation of the fourteen treatment plants belonging to thirteen localities (Huata, Capachica, Samán, Taraco, Chupa, Zepita, Juli, Acora, Laraqueri, Chucuito, Pomata, Tilali, and Conima), located in the circunlacustrine ring of Lake Titicaca and they are outside the project of "Wastewater Treatment System PTAR Titicaca".



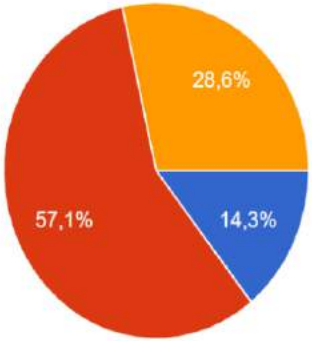
RESULTS

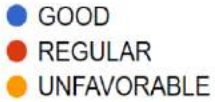


Condition

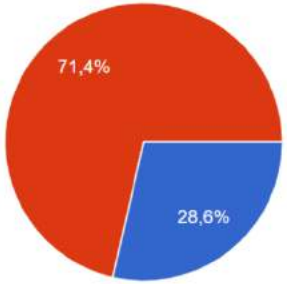


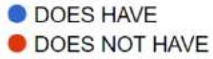
Discharge





Orography





Energy supply

CONCLUSIONS

- This investigation identified 13 localities with 14 wastewater treatment systems, located in the circunlacustrine ring of Lake Titicaca, who are not considered in the Project of "Wastewater Treatment System PTAR Titicaca". localities whose water treatment systems wastewater shows deficiency because only 21.4% have adequate operating conditions for wastewater treatment, and more than 78% of the identified wastewater treatment systems need of immediate intervention; likewise, it was identified that the 86% of the final discharge from wastewater treatment reaches to the Lake Titicaca, directly or indirectly. Therefore, it is concluded that 11 of the 14 Wastewater Treatment Systems can implement Artificial Wetland Systems for Wastewater Treatment.

CONCLUSIONS

- Wetlands are an alternative for the treatment of domestic wastewater for small urban agglomerations, where economic conditions are decisive when launching the type of wastewater treatment, therefore the design models must be adapted to local conditions and analyze the behavior of the different design and operating factors involved, among the most outstanding, are temperature, slope, terrain, vegetation.

Muchas Gracias!

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