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INCREMENTAL LOW COST WATER AND SANITATION SOLUTIONS FOR THE OÉ-CUSSE REGION IN TIMOR LESTE

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ABSTRACT

Sanitation and drinking water supply for small communities are a matter of concern in Oé-Cusse Ambeno, a special administrative region of Timor - Leste. The number of treatment plants in this area is very low and commonly subjected to high seasonal and even daily variations in wastewater flow. On the other hand, these treatment plants need to be easy to manage and to operate. Both wastewater collection and drinking water supply should be considered within a regional planning process to ensure long-term sustainability under various conditions. Specially in an agricultural area, like Oé-Cusse, treated wastewater that is provided in reliable quality and quantity is valued as a precious resource for agricultural re-use, as drinking water supply is valued for increase the standard of living and improvements in public health [1], [3], [4].

The scope of this paper is to provide some easy-to-understand guidance on implementing water and wastewater treatment solutions in small settlements and towns in Oé-Cusse Region. Specific aims of the guidance paper are: to inform about the sustainable options for sanitation and wastewater collection and treatment and to give guidance to decision makers how to select appropriate systems for sanitation and wastewater management with respect to relevant framework conditions, in particular to give decisive advantages and drawbacks of non-conventional systems, biogas settlers and constructed wetlands as well as innovative concepts also for settlements without reliable water supply, that can be connected, in the future, with the main infrastructure network (Example in Figure 1).

The development of a suitable, integrated solution for water treatment and sanitation is a very complex procedure particularly in Oé-Cusse, where the occupation of land is for now mostly unstructured and unplanned. So, this research will consider an articulation between theoretical evidences, fieldwork and community involvement [2].

As a starting point, this paper lists different types of solutions, that can be fitted in Oé-Cusse Region, which are normally known as “Low Cost” solutions, whose key features are: a continued service delivery in sufficient quantity; low cost implementation, operation and maintenance; durability; flexibility and affordability; safety for the user and for the environment and working with different energy sources available on-site. Then a new model can be developed in response to the lack of water and sanitation infrastructures, that can change the environmental, social and economic situation of the Region. The new model prevents the construction of unplanned neighborhoods without any infrastructure system though the application of on-site sanitation and water treatment solutions that can be adapted, in the future, with a technical wall, which is directly connected with the main infrastructure network to be built. The project will be divided in three phases: phase one is the study about

the region and about the infrastructures to implement; second phase is the implementation of the solutions and operation and maintenance; third phase is the adaptation of the solution to the technical wall and main infrastructure network.

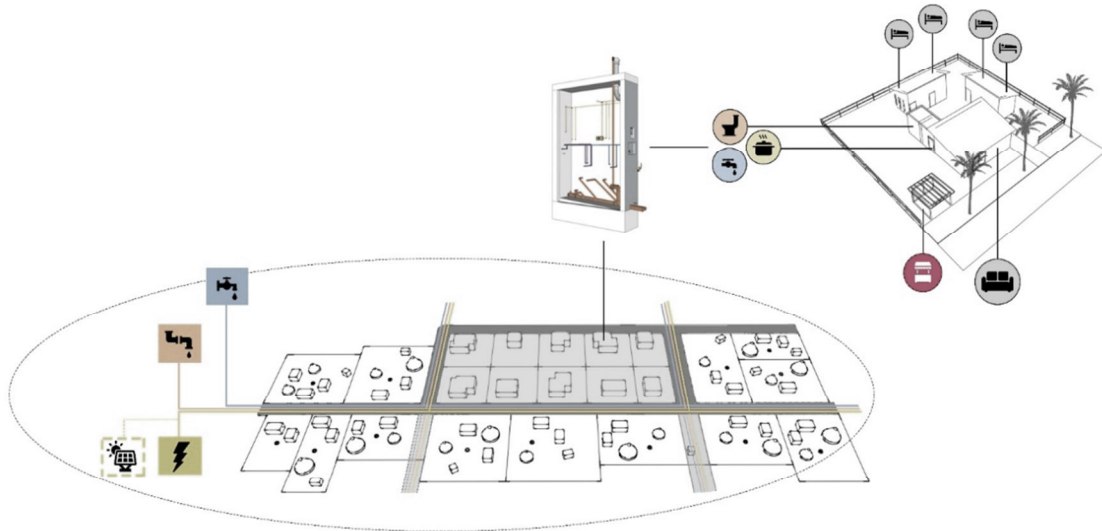


Fig. 1 - Exemple of Pante Macassar - Technical Wall and project area implementation

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