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FROM INCINERATION TO STERILISATION OF SOLID HOSPITAL WASTE IN LOW-INCOME CONTEXTS: A GRADUAL SUSTAINABLE TRANSITION

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Abstract – Open burning and incineration are the two most common treatments for hospital solid waste in low-income countries. Due to the absence of limits on emissions and the lack of technical capacity or funding, obsolete incinerators do not guarantee neither a low environmental and economic impact nor people health. The SIRSU Project, co-financed by the Italian Agency for Sustainable Development and Newster Group, aims to substitute the incinerator in Beira Central Hospital (Mozambique) with an electric sterilizer, an environmentally friendly machine that is also safe for workers. However, it is not sufficient to import this new technology and train the staff. First, an assessment of the quantities and types of biomedical waste produced in the different hospitals is necessary, as well as a careful analysis of the waste management system of all hospitals in the city. If the technology is suitable for the context, then, after the training of technicians for maintenance and operation, a period of accompaniment and monitoring is necessary to optimise performances. The transition cannot be immediate, and a period of coexistence of the two plants (steriliser and incinerator) is necessary. To facilitate the gradual transition, the SIRSU project foresees the foundation of a local start-up to manage the steriliser and offer a waste full transport service for smaller hospitals to the Central Hospital where the machine is installed. This experience could be an opportunity to set guidelines comprehensive of the concepts of safety and security during all the steps of the transition. This aspect can be an important element for defining 1) the most appropriate technical solutions, evaluating the implementations on the control and regulation systems in order to minimize the risks associated with the process, 2) management and above all operational methods in order to guarantee not only compliance with the most precautionary technical legislations, but also modern and advanced operating standards.

Keywords – Development cooperation; hospital waste; incineration; sustainability; technology development; sterilization; waste management; waste treatment