Ten years of the international Human-Environment Observatory of Estarreja: evolution and major achievements

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During five decades, the liquid effluents from the Estarreja Chemical Complex (ECC) were discharged to the Ria de Aveiro lagoon or deposited in evaporation ponds, through open channels and pipelines. For this reason, this area has been intensely studied by the scientific community since the 90s of the last century. The first studies about the impact of the industrial activity in Estarreja were focused on the geochemical aspects of contamination, whereas studies regarding the relationship between industrial activities, populations and their health status, and biological ecosystems remained in an early state. The complexity of this system, together with the human-environment interactions issues, could only be approached through interdisciplinary inputs and contributions from social and health sciences. Thus, to enlarge the scope of the research carried out in Estarreja it was created, in March 2010, the OHMI-Estarreja – Observatoire Hommes-Milieux Estarreja International from the Labex DRIIHM-CNRS (https://ohm-estarreja.in2p3.fr/pt). Indeed, since the creation of this observatory there was a shift in the focus of studies conducted, from geochemically based to the assessment of environmental and human health effects, reflected by the target matrix studied (Figure 1). Also, since the OHM establishment, different approaches have been considered (e.g.: spatial-temporal evolution of the contamination level; health studies of the population; societal changes in the area), allowing to better understand the risk induced by the ECC. The results obtained in the last 10 years clearly show that interdisciplinarity was a key factor to address this complex issue of human-environment interactions. Nevertheless, several knowledge gaps were identified (e.g.: toxic elements speciation, biological individual responses to contamination, particularities of family lifestyles) that can contribute to confirm or infirm this relationship between health, contamination and socio-ecosystem.

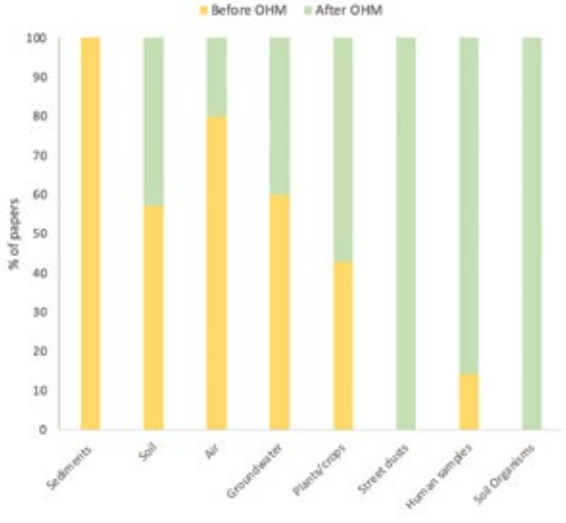

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FIGURE 1
Distribution of papers by matrix studied, published since 1989 until the OHM creation (before OHM) and during the last ten years (after OHM).