

Apart from the known environmental degradation, the core issue addressed by the local population is the absence of multidisciplinary cooperation between the stakeholders in-charge. The objective of the current proposal is to suggest different methodologies to manage WA's ongoing challenges.

- **Tools for stakeholder engagement:** A holistic stakeholder mapping as the primary step of the management plan. DAPSI(w)R(m) framework would be applied such that, fundamental human needs associated with fisheries, agriculture and trading of goods (drivers) that lead to population migration towards the coast (activities), adding extra pressure to the system, can be clearly identified with a bottom-up method. Hence, gamification is suggested as a game structuring approach, used to effectively manage non-gaming issues. Such an approach would be applied in awareness workshops in the form of role-playing with the different actors in order to understand each other's priorities.
- **Tools for water quality:** In response to the ongoing water contamination, the use of zeolites can be useful to prevent or limit significant ecological damages of coastal lagoons and coastal areas in relation to the discharge of lagoons to the ocean. Zeolite structure allows high ion-exchange and reversible dehydration properties, absorbing and capturing contaminants from the water into their pores. Therefore, it is aimed to test their effectiveness for the purification of domestic water creating wells filled with gravel and zeolite in order to monitor the suitability of the system for reducing the concentration of heavy metals and ammonia in the water, before its discharge into the lagoon.
- **Tools to monitor shoreline changes:** Further involvement of the local population will be achieved with the use of the already developed technology of CoastSnap by UNSW Sydney, which allows the collection of snaps from the public. CoastSnap requires the installation of cradles at a fixed place overlooking the sea, where beach users can deploy their smartphones and take the desired snaps. With the use of these assigned hashtags, they share them through social media platforms where the experts will be able to collect, analyse the footage and thus, obtain a sufficient amount of data.
- **Tools to efficiently manage a potential port expansion:** Taking advantage of the ongoing smartPORT project in Hamburg, Germany, operations regarding land-sea interactions can be optimised using the power of Internet of Things. An application would allow the truck-drivers to track port traffic, suggesting them alternative routes and possible parking areas. Warning sensors through a cloud-based platform, would send information in case of potential incident, as well as, at a further stage the sensors would collect climate data. On the other hand, learning from the project of Clean Port Barcelona, an eco-calculator would be created, to quantify cargo's environmental footprint, calculating various emissions factors, analysing cargo routes and, thus, re-evaluate port's demand.

Securing a multidisciplinary stakeholder participation from all the interested actors is the key for the successiveness of each project. The aforementioned suggestions give light towards the effective inclusion of the local population, either by providing employment opportunities or by involving them in the decision-making process.