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Theoretical framework and case reports

Dpsir Framework For Support Of Integrated Assessment

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Interdisciplinarity and knowledge integration are widely applied concepts for decision-support within environmental management. The choice of an appropriate framework to support integrated assessment is an important step for the definition of the system being studied. The DPSIR (Driver-Pressure-State-Impact-Response) conceptual framework is one such system analysis tool which addresses the cause-effect relationships between sectors of human activity and the environment, ideal for natural environments marked by a history of human occupation. Such is the area of the Bahia de Cadiz Nature Park on the Atlantic coast of Spain where much of the natural tidal wetland was transformed into salt pans by 1894, the majority of which are nowadays inactive. Still the area is home to a range of natural habitats and biodiversity and holds its RAMSAR status since 2002 for its international importance as waterfowl habitat. The paper describes how, supported by input from literature review and expert consultation, the framework may be used as an entry point for the definition of the significant D-P-S-I elements (and the links between them) that characterize the park, playing at different spatial and temporal ranges. Human health concepts are defined within each of the framework's category emphasizing its 'integrated' nature. Expert consultation makes the conceptual model more relevant to the 'real world', counteracting its sometimes biased nature. Finally this leads to exploration into data availability and data gaps, indicators and analysis tools that may support integrated assessment during future stages of the research project. There is interest amongst the scientific community to uncovering dynamics amongst drivers within 'Sectors' and 'Infrastructure' groups behind changing land-use patterns and hydrological modifications (pressures); their effects on the different land-types , geological and hydrological characteristics, vegetation and birdlife (states) and the effects of these on the different services (impacts) the park environment offers. Managers point out at economic tendencies and ownership issues as being social drivers that stand in the way of possible sustainable development within the park. Remote sensing and GIS technology are postulated as efficient tools for studying variations of different temporal variations amongst land types and vegetation groups through the analysis of aerial photos and satellite imagery. Birdlife census data collected since the late 80s can reflect biodiversity levels within the park. Finally the framework

hopes to serve as a conceptual base for future investigation within the scope of this project and beyond. Key words: integrated assessment, DPSIR, expert consultation, Bahia de Cadiz Nature Park, wetland