National Coastal Assessment in South Africa – Assessment for the bigger picture

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The coastal zone is where the ocean, the land and the atmosphere meet. It is a highly dynamic space, creating diverse habitats for a high variety of natural biota and shaped by waves, currents and wind. The coast has also been a focus area for human activity and infrastructure development, given the wide range of economic and recreational activities it provides.

Management of the coastal zone frequently happens in disconnection between different land use aspects, potentially leading to conflict between different management goals, e.g. conservation and industrial development.

The South African Department of Environmental Affairs (DEA) has therefore promulgated the Integrated Coastal Management Act (ICMA, add ActNo), in order to facilitate between the various conservation, economic and other coastal land use aspects.

Part of the practical implementation was the development of the National Coastal Management Programme (add year), which assessed, amongst other aspects, the current data and information gaps currently preventing the successful execution of the ICMA. One identified challenge was the current lack of a consistent and integrated assessment of various coastal aspects, relating to the natural environment and socio-economic data.

As a result, DEA tasked the CSIR (in collaboration with Stellenbosch University and Nelson Mandela University) with the conduction of a National Coastal Assessment. This 3 years
project which started in 2017 explicitly examines and evaluates physical, chemical, biological and socio-economic aspects of the coast.

The physical component develops vulnerability indices for flood and erosion risk and the combined coastal vulnerability. The chemical component aims on identifying hotspots of coastal pollution in terms of oils spills, storm water and marine discharge (marine outfalls). The biological component does identify hotspots of biological sensitivity, conservation and threat status and general habitat maps. The socio-economic component will identify hotspots of human economic activity, such as ports and tourism/recreation, but also will assess the coastal populations in terms of their dependence on coastal resources and vulnerability.

Based on these domain-specific assessments, finally a cross-domain pressure assessment will be conducted to identify – most importantly – the cross-domain conflicts and constraints, which frequently remain unknown in the typical domain-specific coastal management field.

The NCA is conducted in a desktop approach, i.e. using existing geospatial data as input. The methodology is based on Geospatial Information Systems, and a multi-criteria analysis being the main analytic tool.

In this presentation we will present the first results of the physical, chemical, biological and socio-economic hotspot assessments and also highlight some of the cross-domain issues that were identified in the process. Recommendations on how to solve pressing conflicts will also be presented.