

THE COASTAL TEAM AT FLANDERS HYDRAULICS RESEARCH: MATCHING RESEARCH PRIORITIES AND CZM NEEDS FOR THE 21ST CENTURY

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The mission of the coastal team at Flanders Hydraulics Research is to deliver knowledge, expertise and advice on issues relevant to the sustainable development, exploitation and protection of the Belgian coast. In this framework, we provide science-based methodologies, modeling results and CZM (Coastal Zone Management) supporting tools. We develop our knowledge taking part in national and international research projects contributing to a better understanding of our coast and its context and essential when solutions to issues relevant to the Belgian coast need to be conceived at the regional scale.

Traditionally, CZM activities in Belgium focus on sustainable exploitation and on minimizing the effect of human intervention on natural systems. During the last 10 years, however, CZM problems need to be tackled from a new perspective. Climate change effects as rising sea levels or increased storminess make necessary modifying CZM practices and priorities. As a consequence, new synergies between research and arising needs need to be found. Researchers and experts have to work now on longer time and space scales and, at the same time, account for processes often occurring locally at small scales. This fact represents a new challenge, especially for the assessment of uncertainty of results and for the validation of the models that should now be based on long-term data including extreme events which in many cases have never been monitored.

In our search for a real synergy between research priorities and CZM needs, our team contributes not only to developing but also to transferring knowledge and expertise into suitable and reliable tools. We take advantage of the knowledge gained thanks to projects as SAFECOAST (2005-2008, INTERREG) for which we delivered a new methodology for coastal risk assessment in the North Sea. We study climate change impact on the Belgian coast in CLIMAR (2007-2011, BELSPO) which objective is developing a framework for the assessment of possible adaptation strategies in Belgium. With SUSCOD (2009-2013, INTERREG), practical attempt to facilitate direct knowledge transfer between experts and coastal managers, we will provide a reliable and user-friendly tool for impact assessment and risk awareness in Belgian coastal towns.

Most of the outcome of these activities is gathered into the Coastal Safety Plan for the Belgian Coast (2007-2010, Coastal Division of the Flemish Authorities) for which we provide tailor-made methodologies and results about coastal flooding impact and risk assessment.

It is clear that CZM priorities have shifted due to the need of anticipating possible climate change effects, but there are also other important CZM needs, as those related to the exploitation of resources. Investigating new aspects related to sediment management, as the impact of human action on the sediment budget (QUEST4D, 2007-2011, BELSPO) or exploring marine energy potential in Belgium (BOREAS, 2009-2011, BELSPO) are also part of our activities. Both sediment management and marine energy related issues are becoming more and more relevant for CZM. However to be able to fulfil old and new CZM needs, more work on understanding, quantifying and predicting fundamental driving processes is still necessary.

References

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