

THE BLAST DECISION SUPPORT SYSTEM BASED ON INDICATORS FOR CLIMATE CHANGE

Verfaillie Els¹, Koen De Baets¹, Henning Sten Hansen² and Philippe De Maeyer¹

¹ Department of Geography, Ghent University (UGent), Krijgslaan 281 - S8, 9000 Gent, Belgium
E-mail: Els.Verfaillie@UGent.be

² CIT, Aalborg University, Lautrupvang 2B, DK-2750 Ballerup, Denmark

The coastal zone environment suffers from an increasing pressure from economic activities, urbanization and population growth. Climate change with effects such as sea level rise, increased flood risk and changing temperature and rainfall patterns has even more consequences for this area. Policy makers are forced to make both long term and short term plans for climate change and sea level rise.

The Interreg IV B BLAST project (www.blast-project.eu) has a primary focus on "Bringing land and sea together", by harmonizing and integrating data between land and sea. The project aims to improve the Integrated Coastal Zone Management and Planning (ICZM & P) and maritime safety in the context of climate change.

Work package 6 of the BLAST project aims to develop new common policies and a web based decision support system (DSS) supporting ICZM under the emerging climate change. To achieve this aim, a methodology has been worked out based on a conceptual model, an indicator approach and an innovative architecture for the DSS.

The conceptual model frames in the context of the well-known DPSIR (driving force - pressure - state - impact - response) approach from the European Environment Agency. This model describes the role of ICZM under the pressure of climate change.

Based on this model, user requirements have been carried out among stakeholders in the countries around the North Sea. These requirements have been translated into a selection of ICZM indicators, giving a signal of climate change. Erosion of a sandy coast could be signal of sea level rise. The DSS will offer specific tools for six of these indicators being erosion, flooding due to sea level rise, potential of renewable energy, geological stability, urban indicators and tourism.

The DSS will have an innovative architecture using state of the art GIS spatial data infrastructure components. The DSS will support Open Geospatial Consortium standards such as web map services, web feature services, web coverage services, but also the more advanced web processing services. This DSS will offer the policy makers and planners specific tools to make decisions on mitigation (e.g. energy production from alternative energy sources) and adaptation (e.g. sea defence) measures.