REFCOAST

TYPOLOGY, REFERENCE CONDITION AND CLASSIFICATION OF THE BELGIAN COASTAL WATERS

Duration of the project: 15/12/2003 – 30/04/2006
Budget: € 180.000
Keywords: Water Framework Directive, Coastal Waters, Typology, Reference Condition, Classification, Benthos

CONTEXT

This project fits within the Second multi-annual Scientific Support Plan for a Sustainable Development Policy (SPSD II), Part II "Global Change, Ecosystems and Biodiversity".
Since the establishment of the European Water Framework Directive in 2000 member states need to comply with the objectives set in this directive.
One of the objectives of the Water framework directive is the classification of different waterbodies into types (typology) according to two systems proposed by the directive. Next to the typology of the surface waters (which also include coastal waters) a 'biological' reference condition needs to be established per type, indicating the status of the waters unmodified by human activity.
The biological reference condition will be based upon a good ecological status of the surface waters, classified as to their biological, hydromorphological and physicochemical status.

PROJECT DESCRIPTION

Objectives
With this study we aim to fulfill all objectives mentioned above for the Belgian coastal waters, up to one nautical mile from the coastline. The project combines a general overview of the Belgian coastal and marine jurisdiction and its status towards the implementation of the Water Framework Directive, the availability of information and datasets together with the scientific analysis with respect to typology, reference conditions and classification of the coastal waters. This project will directly be relevant towards the Belgian obligations regarding the implementation of the directive and will be accomplished through a sequence of different work packages.

Methodology
In work package one the Belgian jurisdiction with regard to its coastal and marine policies will be examined together with its status with respect to the implementation of the Water Framework Directive. Existing datasets and information of conducted research will be listed, analysed and classified according to their relevance. Different datasets to be used are available at different universities, at the Management Unit of the Mathematical Models of the North Sea (MUMM) and at the Flemish Institute of the Sea (VLIZ).
In the second work package the coastal waters will be classified according to their type.
The typology will be based upon the available information and datasets retrieved in WP1, and will be classified according to System A or System B. Both systems will be evaluated and the system that is preferred will be highlighted.

In a third work package the reference conditions will be set. Type specific biological reference conditions shall be established, representing the values of the biological quality elements for coastal water types at high ecological status. In defining these biological reference conditions, criteria for the physicochemical and hydromorphological quality elements at high status will be established. In this work package an evaluation of the different methods (historical data analysis, modelling, expert judgement,…) that can be used for determining these reference conditions will be undertaken and the appropriate method will be selected and applied to the available datasets.

In the fourth work package the classification of the coastal waters will be drafted taking the available datasets from WP1 and the outcome of WP3 into account. The coastal waters will be classified according to their ecological status as proposed by the framework directive and the guidance document on typology, reference conditions and classification systems for transitional and coastal waters.

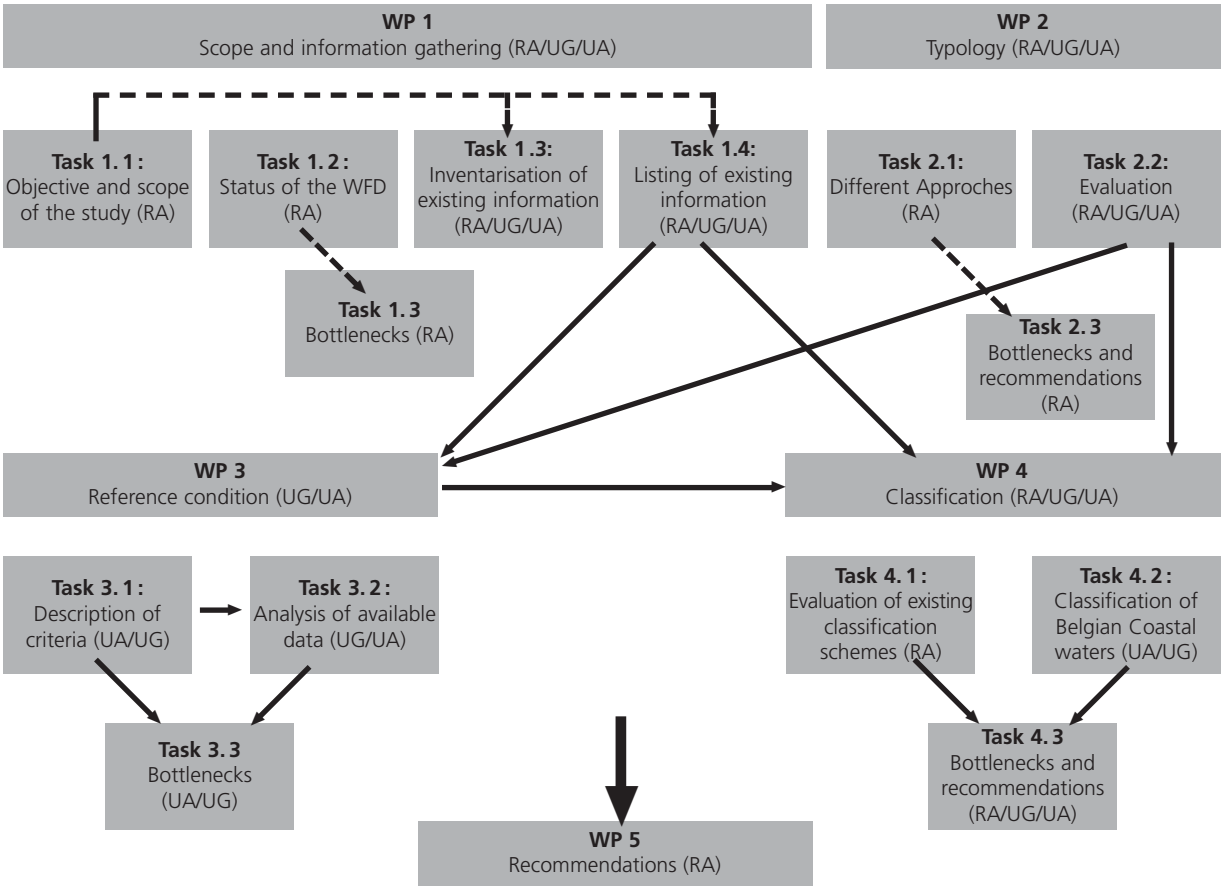
In the last work package recommendation will be elaborated towards policy makers.
Throughout this project association with ongoing studies with respect to transitional waters is looked at.

Interaction between the different partners
The distribution of the different tasks between the three partners is indicated in the figure on the other side :

PARTNERS

Activities

ECOBE
The Ecosystem Management Research Group (ECOBE) of the University of Antwerp has a long tradition in the study of transitional waters. In this scientific domain, both knowledge of ecosystem functions and the coupling with the evaluation of human impact received much attention. ECOBE is the driving force of the OMES research programme (Research of the Environmental Effects of the Sigma plan). It is a multidisciplinary consortium, linking 15 partners, and funded by several governmental departments since 1995. Primarily it aimed at providing the scientific basis for alternative construction and location of dikes. Integration and scientific coordination of all the involved studies resulted in a holistic ecosystem view. An extensive database and an ecosystem model are provided to the Flemish government, offering



the necessary scientific background to support general management.
The knowledge gained through OMES and other projects allowed an active role in pointing out a long term vision for the Scheldt estuary. Within this frame a nature development plan for the whole estuary was constructed.

UGent-Marine Biology Section

This section of the department of Biology has been involved in ecological and systematic research of marine ecosystems from 1970 onwards. The research started with the investigation of North Sea benthic communities, with special focus on the macro- and meiobenthos. From 1980 onwards, research was expanded to include the hyperbenthic and epibenthic compartments. Research is still going on in the North Sea and adjacent estuaries. European estuaries have been investigated in the framework of international programmes. Since about ten years, other geographical areas have been included: Deep-sea areas in the Atlantic Ocean, Biology of the Antarctic meiobenthos, Ecology of tropical estuaries, lagoons and sandy beaches.
Next to the biological subjects geochemical characteristics are determined and analysed. All chemical methods are adapted for analysis within the sediments. Microbial aspects (radioactive labelling) and experimental microcosmos research (culture chambers and respiration chambers) are available.

Resource Analysis (RA)

Research and consulting agency Resource Analysis (RA) has a strong reputation in strategic policy advice and therefore has an extended knowledge of all legal and juridical aspects with regard to the environment (including the marine environment). RA assists processes on the interface between research and policy-making, and conducts research on sustainable use and management of natural resources. Besides RA develops methods and techniques for analysis and policy-making processes. These methods will be used within this project. RA follows from close range the progresses made in the Scaldit project and within the Schelde and Maas Commissions. One of the projects which is in particular important for this study is the study with regard to the evaluation of ecological criteria for the North Sea by means of a multi-criteria analysis and by means of a rapid assessment programme. Within this project RA needed to analyse different indicators developed under the GONZ project of the Netherlands.

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