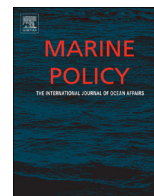




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Internet based training and education for coastal management in Germany: A critical evaluation

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ABSTRACT

This paper examines progress towards Integrated Coastal Zone Management (ICZM) implementation in Germany based on findings from a stakeholder survey undertaken as part of the national German ICZM stocktaking exercise and evaluates the state and effectiveness of ICZM e-learning. It is evident, that training, education and capacity building for ICZM are important issues in Germany, but have to fulfil specific demands and requirements. The national ICZM internet platform "IKZM-D Lernen" has been developed to meet this demand. The contents, progress and state of the platform are described and compared with the similar CoastLearn and SETNet systems. Using a SWOT-analysis and an internet visitor monitoring tool, several modules and module groups were evaluated to establish the success of different types of online training and education modules. National and international ICZM strategies consider best-practice and regional case studies as an important element to illustrate the benefit and added value of ICZM, to ensure a knowledge transfer and to support training and education. However, German best-practice examples that are publicly available online have only very limited access rates and require active dissemination to have a training impact.

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1. Introduction

Successful implementation of Integrated Coastal Zone Management (ICZM) requires specially trained people that promote and maintain the ICZM process, serve as regional moderators, and act as links between stakeholders and the general public. Today, ICZM training and education are widely available all over the world and a recent evaluation of the current situation in Europe is provided by Garriga and Losada [1]. In Germany, the present situation is similar and most coastal universities offer lectures and single modules on ICZM. However, in the early 2000s, training and education were still mainly focussed on undergraduate and post-graduate students. Professionals in authorities, coastal managers and planners had only limited access to up-to-date educational materials. To address this gap, distance and e-learning systems were developed. CoastLearn [2,3] is one of the best known of these systems, is available in many languages and was recently positively evaluated by Krelling et al. [4]. In Germany, CoastLearn was well promoted, but the practical relevance and acceptance were and are very limited. Reasons include a different understanding of ICZM across sectors, a generalised and academic approach that does not take into account the national specifics and last but not

least, the lack of certification. Consequently, CoastLearn never became part of the curriculum of distance learning courses and academic education in Germany. In addition to the reasons cited above, one of the most important shortcomings of CoastLearn was an absence of convincing best-practice case studies that demonstrate the added value of ICZM.

During the last decade the interest in concrete best-practice case studies has increased all over Europe. In this respect, the European project OurCoast is an important milestone because it provides a comprehensive description of more than 350 ICZM case studies in Europe and stores the information in a multi-lingual database. All best-practice case studies are publicly and freely accessible through a website. A second important development was achieved within the large European project SPICOSA. It developed a generally applicable research approach framework for coastal zone management and applied it in 18 study sites across Europe [5]. This project created a joint understanding of ICZM and a joint methodology to approach coastal management issues. It provided comparable regional application case studies following the same approach. The experiences are documented in a teaching package (SETnet) available through the Internet.¹ OurCoast, SPICOSA¹ and other initiatives underline the importance of best-practice case studies as well as the Internet as a medium in training for ICZM capacity building today [6–8].

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¹ <http://www.spicosa.eu/setnet/>

In the early years of 2000 a strong demand for a national German training and education system on ICZM existed. Later this demand became more pronounced during the discussions about the national German ICZM strategy [8]. The objectives of this paper are to consider the demands and requirements in Germany; the development, progress and state of the national ICZM internet platform “IKZM-D Lernen”, to critically evaluate the success of different types of online training and education modules and to assess the potential of SETnet for ICZM education in Germany and, finally, to discuss the importance of regional best-practice case studies.

2. Background: Demand for training and education in Germany

For nearly two decades, ICZM in Germany was hardly more than an academic exercise. The term, basic principles and objectives were familiar only to a small community. In Germany, the well established spatial planning system already covers many aspects of ICZM and practitioners and policy makers did not see a need for ICZM. In 2002, the European Recommendations on ICZM defined the principles for coastal planning and management in Europe and created an ongoing discussion process [9]. ICZM was then high on the agenda in Germany with National and federal state ministries and authorities meeting several times to agree on a joint understanding of ICZM and to develop the national ICZM German strategy. During this process, other stakeholders, practitioners and scientists were only involved during a national ICZM conference. In the resulting German strategy, ICZM was “...viewed as an informal approach aimed at supporting sustainable development of the coastal zones through good integration, coordination, communication and participation. On the one hand, ICZM is a process that should permeate all planning and decision-making levels as a guiding principle and, on the other hand, is a tool applied prior to formal procedures for the purpose of integrated identification” [8]. One of the basic principles in the German ICZM strategy is to make use of best practice case studies and to ensure a transfer of experiences between stakeholders.

After a review of the national strategies, the European Commission asked for national ICZM progress reports [10]. The basis for the unpublished German progress report was a large national-scale ICZM workshop, several follow up-meetings organised by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the Federal Environment Agency (UBA) as well as a comprehensive phone and online questionnaire survey. In the survey, 160 major stakeholders from policymaking, governmental organisations, business sector, academic community and NGO's were asked about their understanding of ICZM, its necessities and future perspectives.

Some results of this unpublished survey are compiled in Fig. 1. Today, most coastal stakeholders are familiar with the term ICZM. However, major objectives of ICZM are not sufficiently met in Germany. The survey shows shortcomings in the integration of interests in the coastal zone and in the co-operation between stakeholders. As a result, most participants would appreciate a national ICZM co-ordination office. The survey reveals that major principles of ICZM are still not, or insufficiently, implemented. It remains an important issue and, despite the existing training and education courses, capacity building is still necessary. As a consequence, the German ICZM progress report explicitly underlines the need for knowledge-transfer and additional training courses on ICZM [11]. These needs are not clearly defined at this stage, but it is evident that a wide range of potential stakeholders require further knowledge. In addition, the following demands of a training system can be deduced: it has to be publicly available, accessible, in-expensive, include certified e-learning training and

education modules, tailor-made for German stakeholders and in the national language. It has to include the latest methodological developments, strategies and best-practice case studies. Against this background, the national German Internet platform for learning and teaching modules in the German language, IKZM-D LERNEN², has been created, extended and further developed.

3. Materials and methods: Coastal online modules in Germany

3.1. The internet platform ‘IKZM-D Lernen’

The internet platform “IKZM-D Lernen” is an online learning system, that consists of independent online study, information and teaching modules. It is maintained by EUCC—the Coastal Union Germany. The modules deal with the coast and the sea in general and with Integrated Coastal Zone Management (ICZM) in particular. The modules are free of charge and are targeted at a wide audience that includes coastal practitioners, scientists, students and interested citizens. Most modules are written in German for specific purposes and by different expert authors.

The platform provides a software tool that enables authors to develop their own internet modules as part of ‘IKZM-D Lernen’. The software does not require specific knowledge in programming and was designed as a simple tool that requires only a short technical introduction of 15–20 min to enable the user to create their own module (Fig. 3). Both German and English operation menus are offered. As the tool is accessible via the internet, it can be used worldwide. All the information can be arranged in an unlimited number of chapters and subchapters, as defined by the author. Each chapter consists of individual paragraphs comprising text, additional information or an image and each paragraph is handled separately and can be edited, deleted, expanded by additional information or moved within the chapters. The html-editor TinyMCE[®] is used for inserting text paragraphs and describing figures. It allows for a limited number of formatting options. Concise, well-arranged web pages can thus be easily produced in a consistent manner.

3.2. Thematic modules for higher education

Thematic modules are focussed on one issue of high general relevance and in total, 8 thematic modules are provided on the platform (Fig. 2). These reflect the international and national state-of-the-art, are free of charge and address both students and coastal experts. Online tests encourage the use of the platform for self-studies or as a supplement to academic education. A core module is ICZM (‘Integriertes Küstenzonenmanagement’) that was developed in co-operation with Rostock University³. This module is part of the Master of Science distance learning course “Environmental Protection”, the regular Master of Science course “Aquaculture”, of the independent module-group “Use and Protection of Natural Resources” and is used within international summer schools, like ‘Sustainable Development on the Baltic coast’, an international optional course for postgraduates. The basic online module is available to the public free of charge, but as part of the regular study course at Rostock University a registration is necessary and a tuition fee is charged. Several aspects distinguish this module from other thematic modules on the platform, primarily the audience, accreditation and incorporation into the remit of a broad academic framework. The audience, graduate and post-graduate students, is well defined and clearly targeted in the

² www.ikzm-d.de

³ <http://www.ikzm-d.de/main.php>

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