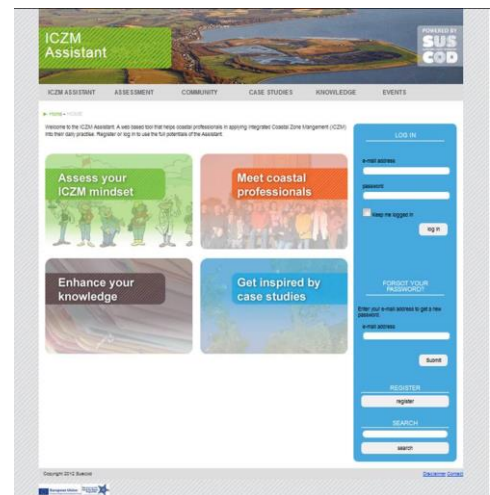


The ICZM Assistant

An interactive, easy to use, tool for the coastal professional.

Article about tool development and a change management approach for coastal management in an international partner context.

Marc Beets and Ruud Raaijmakers



Content

1	Introduction	1
2	The ICZM Assistant	1
3	Tool development	3
4	Change management approach	5
5	The SUSCOD project	6

1 Introduction

The ICZM Assistant is an interactive tool developed for the coastal professional. It distinguishes itself by being easy accessible, also for non experts. It has been developed as part of the SUSCOD project, subsidised by INTERREG IV B fund. In this article, the description and purpose as well as the conceptual model of the ICZM Assistant is described (Chapter 2). After this, the development methods are described in chapter 3. To successfully develop a tool in an international project with multiple partners, a change management approach has been used, which is described in chapter 4. Finally, you will find a brief description of the SUSCOD project and its goals (chapter 5).

2 The ICZM Assistant

2.1 The ICZM Assistant in brief

The most visible result of SUSCOD is the ICZM Assistant. A practical, very user friendly, web based tool: www.iczmassistant.eu that helps translate the 8 ICZM principles into practical advice and solutions for coastal practitioners. In this web based tool, the most innovative elements are two assessments, where one can test the usage of the 8 ICZM principles in projects and /or coastal policies. Next to this, information (documents and web links) are accessible, other professionals can be found and contacted and pilot projects are available to look into.

The main goal of the ICZM Assistant is to assist or aid the coastal professional in the daily implementation and usage of the ICZM principles, therewith improving the coastal projects and ultimately the coast. The Assistant is unique for its user friendliness and usability for multiple user groups, ranging from experts to the general public.

2.2 Conceptual model: the “Five bulb model”

The design of the ICZM Assistant is based on a simple conceptual model, with five, interconnected bulbs. These bulbs compose the five main elements of the Assistant. The model is shown in figure 1.

1. Why use ICZM: an explanation of the story of ICZM principles;
2. How to apply ICZM: two assessment tools: the Quick Scan and the Assessment;
3. What is ICZM: a knowledge database and search functionalities;
4. Where is ICZM applied: a map with case studies, connected to the related documents and web links;
5. Who applies ICZM: a community with experts.

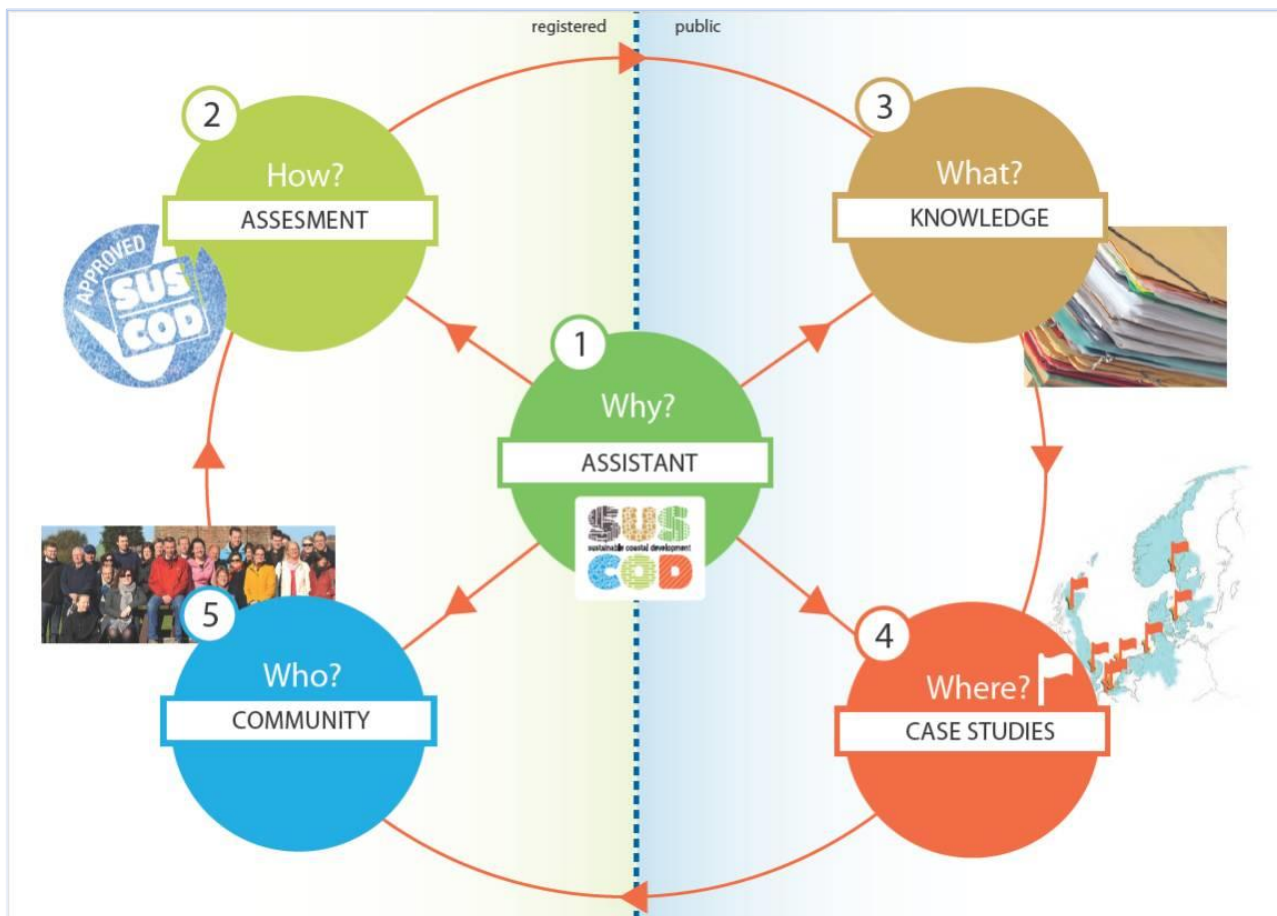


Figure 1: “Five bulb model”

The *heart* of the ICZM Assistant consists of a database, where all data is interlinked. Users can access the data via search criteria, pilot projects or via the ICZM Assessment. In the database people, projects and documents are connected via criteria and internal tags, and therefore accessible through different search items.

2.3 ICZM Assistant, for whom?

The ICZM Assistant aims especially at project leaders, policy makers and water professionals to integrate the ICZM principles in developing projects and plans, and therefore to achieve practical solutions that ensure integrated and sustainable social, economic and environmental development. Using the ICZM Assistant is also recommended to NGO's, engineering or consulting companies and interested citizens, to gain knowledge and insights.

2.4 Knowledge exchange

The website www.iczmassistant.eu offers a database filled with information about vital coasts and an online community with relevant 'colleagues'. A registered user (member) of the Assistant has access to all functionalities, which links one to relevant information, documents,

project examples and relevant people. Besides that, every member can upload documents, websites and case studies from their own practice into the Assistant too. In this way we can learn from each other.

The database is also linked to the ICZM Quick scan and the ICZM Assessment. Two different questionnaires, that you can fill out to see where you or your project stand on integrated coastal zone management.

2.5 ICZM Quick Scan

The quick scan is a brief questionnaire to get the goals of ICZM across in a way that is fun and easy. After answering ten illustrated questions, the tool shows you what kind of ICZM type you are and what you might need to improve to get even more ICZM experienced.

2.6 ICZM Assessment

This extensive test gives you customised information on how to improve your project or policy and how to apply the eight principles of ICZM. With a list of questions, the ICZM Assessment identifies the strengths and weaknesses of your initiative and guides you in showing helpful case studies, documents, web links and people that will help your project become even more ICZM proof.

3 Tool development

3.1 Introduction

The development of the ICZM Assistant has taken place in three phases. The first phase was the definition phase. In this phase an analysis of existing tools was conducted to specify the gap in existing web tools and web sites, and the use of the tool was defined. In the second phase the ICZM assistant was built, followed by a third phase of testing and refining the Assistant.

3.2 Definition phase

In order to define the added value of the ICZM Assistant, firstly an analysis has taken place on existing web-based tools for the coastal practitioner. The conclusion of this analysis was that existing ICZM tools are mainly for ex post purposes and of rather complex scientific character. Specific conclusions about existing tools on ICZM were:

- There is no online tool that allows you to insert your project's characteristics, assess your project against ICZM criteria and that support you with information and tools to improve your project
- Information is spread over a large number of tools;
- There are so many tools that it is difficult to select which one to use;
- Information is often too general to be useful for specific users;
- Information is sometimes difficult to find and accessible.

These tools and web sites are of very limited value for coastal practitioners involved in the actual development and implementation of the ICZM principles into projects and policy. In order to bridge the gap between EU policy and daily practice the ICZM Assistant has been developed.

The ICZM Assistant is an open-source web based tool. The design of the ICZM Assistant is based on a simple conceptual model, the five bulb model. See figure 1.

The structure of the ICZM Assistant is based on the notion that different levels of interaction between participants are an important element of the decision making process. A combination of knowledge from different stakeholders, can support wiser decision making. The ICZM Assistant promotes open information sharing. In order to support decision making the ICZM Assistant has different levels of interaction; the user can find information; view case studies;

consult experts; share knowledge and assess its own projects or policy. The levels of interaction for different user groups in the ICZM Assistant are shown in Table 1.

Learning can be speeded up through interconnection. Therefore all levels of interaction in the ICZM Assistant are interconnected. For example the assessment results for a project or policy, directly refer to relevant documents, community members and case studies (best practices).

	European Public	ICZM Stakeholders	Expert scientists	Practitioner
Awareness	Coast	Internet	Story	Community
Find Information	Internet	Story	Community	Knowledge
Active Involvement	Story	Community	Knowledge	Case Studies
Learning	Community	Knowledge	Case Studies	Assessment

Table 1: levels of interaction for different user groups in the ICZM Assistant

3.3 Development phase

The building of the ICZM Assistant has taken place on the basis of two methodologies: Systems Engineering and SCRUM. These methods have been combined, in order to facilitate an effective, but flexible methodology for building a practical web-based tool. Next to this also process management tools have been used such as prioritising via Moscow analyses and scenario's. The methods used will be explained next.

3.3.1 Systems Engineering (SE)

Systems Engineering has been applied in the development process to have a structured and retraceable development process. It is a design method, aimed at structured and traceable recording of the decision making process. The development process based on Systems Engineering has the following steps: Define project objective and boundary conditions; Collect user requirements; Make a requirement breakdown structure; Make trade-off on the basis of objective and boundary conditions (MoSCoW); Conceptual design (prototype); User gives feedback on the prototype (verification, validation).

The boundary conditions of the tool design are the project objectives, defined by the SUSCOD project. Other boundary conditions were: development within budget and time frame of the SUSCOD project.

With this starting point the user requirements were collected. These user requirements were collected in several interactive stakeholder sessions involving the SUSCOD project partners. All requirements were listed in a requirements breakdown structure. Not all requirements fitted within the scope (development time and budget) of the SUSCOD project. Therefore the requirements had to be prioritised.

3.3.2 Moscow analyses

In order to prioritize the requirements a MoSCoW analysis has been applied. MoSCoW is a methodology in software development in order to reach a common understanding among stakeholders about the priority of each of their requirements. MoSCoW categories are prioritised from functionalities that are essential (must have) to functionalities that are nice, but not needed for the current project. The categories are: **M**ust have; **S**hould have; **C**ould have; **W**on't have. The MoSCoW analyses was conducted in an interactive session, wherein all partners have participated.

3.3.3 Scenario building

During the process, decision making sometimes will be difficult, because the project partners will be unable to overview the consequences of their prioritisation of requirements. In order to help the project partners in decision making, the tool of scenario building has been introduced. The following scenario's were sketched and explained to the project partners.

- The coastal search engine: an advanced knowledge database for coastal professionals
- The coastal assessment: the coastal practitioner can assess his/her project
- The coastal spotlight: case studies are highly visible
- Live community: Interaction between coastal professionals

On the basis of the scenario building a final decision for the development of the tool was possible. A combination of scenario's was chosen and worked out in an interactive session.

3.3.4 SCRUM method

SCRUM is a method for software development, where software components are developed in multi-disciplinary teams, in short Sprints (realisation of predefined components) of 1 to 4 weeks. In our SCRUM method, the development of the ICZM Assistant was broken down in the development of components of the website. For each component, a conceptual and functional design of the user interface was made (without programming), and the project partners were asked to give feedback. After development of the component it was made available for testing in an internal testing environment. On the basis of internal feedback improvements were made. After approval, the component was made available for external testing on a test website. The feedback of the user was used to improve the functionalities and

3.4 Testing

The testing of the ICZM Assistant was conducted through a user acceptance test, on the basis of a test form. Testing is an essential part of tool development, done with pre-defined users or user groups. In this way, the tool and the usage of it in practice is tested while at the same time, the project partners are getting used to operate the tool. To commit the future user. All test results were listed in a document, where the test results, suggestions for improvement were listed and the developer added comments on this for future development purposes.

For training in using the ICZM Assistant, a train-the-trainer course was developed for the project partners. In this way they learned to use the tool and were able to spread their knowledge of the tool. As part of this course an instruction video was developed, that explains how the assistant works. This video is accessible through this [link](#).

4 Change management approach

4.1 Introduction

Developing a tool, as part of a bigger project and financed with public money, calls for a special approach, especially when, as is with this tool, an external consultancy consortium¹ is responsible. In order to assure that not only the principal but also the other project partners adopt the tool a change management approach was used.

4.2 Guiding principles

The approach was based on a number of principles, which will be elaborated next: internal stakeholders; building trust, creating commitment and ownership.

4.2.1 Internal stakeholders.

¹ A consortium of Grontmij, Balance and Podium was formed for this project, and among other things responsible for development of the ICZM Assistant.

All parties involved in the broader project have an interest in the ICZM Assistant. Not only because this tool is part of their international project cooperation, but also because they are one of the intended user groups of the tool. Therefore, it is essential to recognise them as interested parties and give them a formal role and platform to influence the decision making process.

4.2.2 Building trust

An external party, realising an important deliverable of a project, needs to have a basis of trust. We applied the following approach

- Adding knowledge and skills: show our goals, plans and approach and give insight in our knowledge/ experience of tool development as well as coastal management.
- Giving means: supporting the project partners with the means to easily get acquainted with the tool, use visualisations, create forms to fill in, etc.
- Give, not ask: because we are the experts, we provide them with knowledge, proposals and ask only small contributions. This was done by organising sessions during project meetings where they were present already.

Combined with the inner stakeholder approach, trust in the developers grows. Which opens up the process for creating ownership.

4.2.3 Creating commitment and ownership

Ownership of the tool by the project partners was an essential internal goal of the consortium, because the tool is part of the deliverables of their international project. And on top of this, the project partners were to use the tool, by uploading their case studies, knowledge and inviting their contacts to register and join.

In our approach and working method, each and every step of the tool development was consulted with the project partners. In interactive workshops, working sessions and discussions during project meetings, the consortium defined the functionalities to be specified and worked on joint outcomes, approved by all partners. These were visualised and given back to the partners to comment and improve. After approval, the functionalities were built (programmed) and put up for testing. Also after the testing, changes could be made.

Important steps for creating commitment and ownership were conducting a Moscow analyses (see section 3.3.2), scenario building (see section 3.3.3) and testing (see section 3.4). These processes were crucial in defining the look and feel of the tool. Because the partners made these decisions together, a joint commitment was created.

5 The SUSCOD project

The Sustainable Coastal Development project (SUSCOD) is part of the European Union's Interreg IVB North Sea Region Programme. SUSCOD unites people that pursue a climate resistant, vital North Sea coastline where economics, environment and safety go together. Organisations from Belgium, Denmark, the United Kingdom, Sweden and the Netherlands joined forces to pursue this.

5.1 SUSCOD goals

The aim of the SUSCOD project is bringing the 8 ICZM principles into practice. This has been done by applying the principles to the partners' pilot projects, discussing them, learning from the experiences and sharing the knowledge gained in conferences and in the ICZM Assistant, the web based tool. During the project, the partners successfully worked together with inhabitants, authorities, coastal professionals, project leaders and policy officers, to fully utilize the opportunities for coastal development.

Another SUSCOD goal was creating a practical tool for implementing integrated and sustainable coastal development strategies following the 8 ICZM principles. This goal was converted into the most visible result of the SUSCOD project. Within this tool one can share and acquire knowledge and experiences from various other coastal projects around the North Sea and other coastal regions in Europe.

5.2 The 8 ICZM principles

In 2002 the European Committee approved 8 guiding principles for good (governance on) coastal management. These principles stipulate that integrated coastal zone management should accommodate natural systems as well as human activities, take into account the interests of present and future generations and are adaptable to new insights and developments. It should also reflect local specificity, respect the carrying capacity of natural eco-systems, involve all stakeholders and enlist support from all the relevant authorities on a local, regional and national level. Last but not least, integrated coastal zone management should apply a combination of instruments which facilitates, on the one hand, the mutual coherence between the various sectoral policy targets and, on the other hand, the coherence between spatial planning and spatial management. The principles are summed up and explained in detail here: http://www.coastalwiki.org/wiki/EU_ICZM_Recommendation

Contact

For further information, please contact:

Marc Beets (Project Manager) at marcbeets@balance.nl or +31 6 55 10 37 34

Ruud Raaijmaker (Consultant) at ruud.raaijmakers@grontmij.nl or +31 6 13 22 69 38.