Euro-limpacs

Project no. **GOCE-CT-2003-505540**

Project acronym: **Euro-limpacs**

Project full name: **Integrated Project to evaluate the Impacts of Global Change on European Freshwater Ecosystems**

Instrument type: **Integrated Project**

Priority name: **Sustainable Development**

Deliverable No. 131

"Report from first European DSS end-user meeting"

Due date of deliverable: **30 April 2006**
Actual submission date: [15.5.2006]

Start date of project: **1 February 2002** Duration: **5 Years**

Organisation name of lead contractor for this deliverable: **entera**
Author: **Thomas Horlitz**

Revision 1

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level (tick appropriate box)		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

The Decision Support System in the EU Research Project Euro-limpacs - Stakeholders and end-users' requirements for DSS in Water Management

Thursday, April 6th, 14:00 – 18:00

1. Preliminary Notes

The "First European DSS end-user meeting" has been embedded into the conference of the European FP 5 project HarmoniCA for several reasons:

1. Through the combination of the two meetings, an attractive programme could be offered to the participants which, besides the Euro-limpacs workshop, included a number of workshops on related issues and, thanks to the HarmoniCa conference organizers, very good basic conditions.
2. Given the high number of experts at the conference there was a chance to attract additional attendees to the workshop and thus to integrate more opinions and experience.

2. Workshop objectives

- To give an overview on Euro-limpacs as a whole
- To present focus and general functioning of the Euro-limpacs DSS
- To show experiences with the Elbe DSS
- To see what we already know about end-users' requirements
- To receive objections, comments, requirements for the further development of the DSS.

3. Presentations

Luce Jacovella: General Introduction to Euro-limpacs – information system and end user strategy

Main focus of the presentation was to give an overview on the project structure and goals. The complete presentation can be downloaded from http://www.eurolimpacs.ucl.ac.uk/docstore/Euro-limpacs-End-users_presentation.ppt. In addition to this a poster covering the whole project and the end-user strategy was presented at the conference (http://www.eurolimpacs.ucl.ac.uk/docstore/Harmoni-CA_Poster2.pdf).

Thomas Horlitz: End-users' requirements regarding a water management DSS - results from interviews/questionnaires in 6 EU-member states
Thomas presented the results of the interviews and workshops held by work package 9- partners in the respective countries.
Main issues where

- the relevance of climate change for current water management processes
- main problems and knowledge gaps in connection with the implementation of the WFD
- Status of DSS and models use in water management
- Willingness to work with DSS in the future
- End-users' requirements regarding the features of DSS

It was emphasised that the results show the heterogeneity of the approaches and requirements but on the other hand can't be seen as representative. Even within member states different approaches and points of view are to be found. It might be "dangerous" to draw conclusions for a whole country built upon the opinions of some water managers, especially if they work on a regional level.

A detailed summary of the results will be available in the upcoming "Summarised report from first catchment level meetings" (Euro-limpacs-deliverable 132).

Sebastian Kofalk: Lessons from the Elbe-DSS

Sebastian Kofalk from the German Federal Institute of Hydrology presented the Elbe-DSS, a Dutch-German co-production, and lessons learned during the developing process. The system consists of the 3 modules "main channel", "catchment" and "river network"; it includes a database with statistical, economic and spatial data (ArcGis, ArcInfo, ArcView).
The Elbe-DSS works with management objectives, scenarios and measures, which are defined as follows:

- A management objective describes the state which should be achieved to meet legislative or other goals
- A scenario is a pathway into the future determined by climate, hydrological, economic, ecological and/or other changes in the catchment.
- A measure is an action taken to achieve the objective (Matthies et al. i.p.[1]).

The current version of the Elbe DSS can be downloaded under
http://elise.bafg.de/servlet/is/3283/

The experience of the project teaches that the main difficulty is to find a proper balance between scientific standards, the availability of models and in particular data, and the requirements of users. Ideally the design of a DSS follows an iterative path which ends in an optimal balance between technical functionality, scientific quality and user involvement (Fig. 1).

[1] Matthies, M., Berlekamp, J. Lautenbach, S, Graf, N. & S. Reimer (i.p.): Decision Support System for the Elbe River Water Quality Management

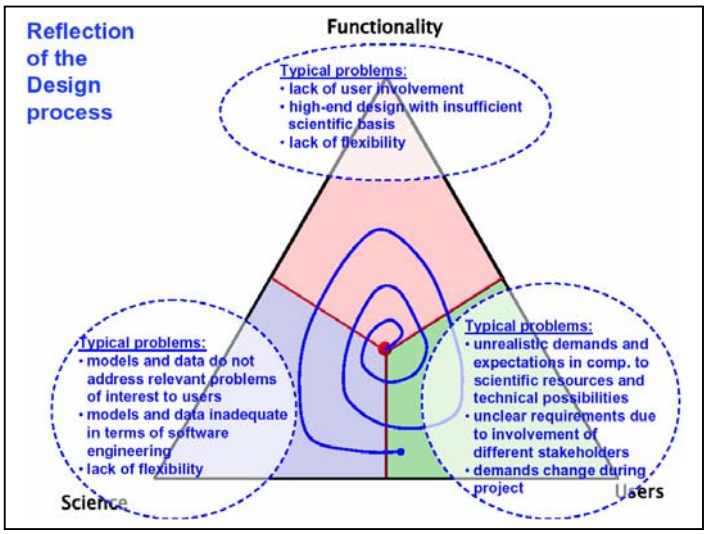

Fig. 1: Iterative design of a DSS with typical problems that arise if one of the aspect of the design is overemphasized (Kok & Kofalk, i.p.)

The complete presentation can be downloaded under: http://elise.bafg.de/?7294 .

Conor Linstead, Hongyan Chen: Purpose, goals and design of the euro-limpacs DSS

Focus was to explain the main ideas behind the concept and show the current status of the DSS in order to discuss how end-users' requirements can be met. The complete presentation can be downloaded from: http://www.eurolimpacs.ucl.ac.uk/docstore/DSS_presentation.ppt

4. Discussion Results

General attitude towards DSS

Generally, a DSS is seen as a helpful tool for water management. Definitions and expectations vary widely. (Annotation: In the framework of Harmoni-CA it is planned to produce a synoptic summary of available DSS).

[2] Kok, W. & S. Kofalk, (i.p.): Towards a User-oriented Design of a DSS for Integrated River-Basin Management: the Elbe DSS Prototype

Main purposes of a DSS
In the group a wide range of possible purposes was identified. There is a range between a DSS for strategic decisions at EU-level (see interview Quevauviller), National/river basin level and the need of a quick, simple system for real-time discussion with stakeholders to make decisions on management options. Many participants considered the incorporation of a Multi Criteria Analysis (MCA) approach as helpful for decision support.

Complexity of a DSS
The complexity is partly connected with the purpose of the DSS. But it also has to be in due proportion to available data and existing models.
The attending practitioners considered some of the existing DSS /models solutions as too simple ("simplistic"), others as too complicated. The question was raised whether something like the Elbe DSS might already be too complex for typical water managers ("why use a Rolls-Royce when a Volkswagen would do it?"). Something in between is needed, which should be less science-driven but more user-driven.
These results correspond very much with opinions expressed in other workshops during the HarmoniCa Conference in Osnabrueck as well as with the results of the Euro-limpacs end-user workshops at national / catchment level. There was common consent to the presented results saying that in many cases five step-scales or even the indication of the best management option would be a sufficient output of a DSS.

Requirements and suggestions for the DSS

The DSS should not only give support for comparing options but also for generating options. Some attendees would appreciate if the DSS could also answer the question: how much of which measure is necessary to achieve a goal?
It would be an advantage if "solutions" from stakeholders could be put into the DSS and tested. Further it was recommended to

- Use the right terminology according to the WFD and other legal regulations
- Use existing data, databases and GIS-systems (although licences might be a bottleneck)
- Indicate uncertainties of results
- Highlight conflicting/interactive management options. There was uncertainty as how to solve problems like chain reactions, interactive influencing of different factors, especially if parts of the input are integrated as results.
- Incorporate knowledge bases and learning tools.
- Start early with "advertising" and training on the DSS

From different HarmoniCa projects a number of recommendations and offers has been made to integrate existing modells, especially

- Glen George: to make CLIME available

- Michiel Blind (HarmoniCA, Catchmod): for one Euro-limpacs member to attend an OpenMI course (fee and travel costs covered). Open MI is a newly developed interface for the interconnection between models which will play a bigger role for the EU KOM in the future (see interview Quevauviller)

5. Interview with Philippe Quevauviller, DG Environment

Mr. Quevauviller could not attend the workshop, so entera organised an extra meeting with him one day earlier. Involved in the discussion were Hongyan Chen, Conor Linstead (SWIMMER), Luce Jacovella (UCL), Thomas Horlitz, and Achim Sander (entera).

Mr. Quevauviller is generally very interested in the Euro-limpacs issues, especially in the problem of connecting Climate Change issues with water management. He shares the same experience regarding disinterest / lack of willingness to deal with CC issues in connection with water management. DG environment don't want to push too much now. For the time being everybody is busy with implementing the WFD as it is, but DG Environment are aware of the problems. This year is seen as a "transitory" but in 2007/2009 more emphasis will be laid on these issues. The connection between CC and water management will be a big issue in the near future.

End of September 2006 a "Science Workshop" will take place in Brussels on "CC and Water Cycle". Euro-limpacs will be invited to present its concepts and results. This seems to be interesting not only in order to present results but also for maintaining and developing collaborations for future research projects. As seen at the HarmoniCa Conference the knowledge exchange between similar projects is of high importance.

The first step regarding policy action will be to develop a guide on how to deal with the complex CC/water. Second step – if necessary - might be regulations/legal measures.

Mr. Quevauviller is willing to make contact with the people in his department (DG environment/water). From his perspective the possible input to "Euro-limpacs" could be:

- Willingness to comment on documents
- Arrange a meeting in Brussels – otherwise physical participation for himself and people from his department would not be possible.

Opinions and recommendations regarding the DSS

Reasons why research results are not as much used as possible:

- Not in context
- Not applicable
- No harmonisation

These comments show how important communication is not only with potential end-users but also with European policy-makers and other research groups.

Recommended:

- Use of Open MI, which is software developed in Catchmod/HARMON-IT for connecting different models. The EU-KOM will strongly support this interface in the future

- Upcoming are new directives on floods and draughts management. It would be desirable to open the DSS for additional criteria.
- Use existing GIS systems
- Establish a connection with the European Environment Agency (EEA)

Look at what has been developed with common GIS-systems:
- Harmonisation of different tools and data
- Links to different tools and data
- Hugh potential for mapping, modelling

Desirable:
- Distinguish between natural and anthropogenic influences for Climate Change
- Look for possible actions against anthropogenic influences
- Identify mismanagement that leads to acceleration of CC

Generic or individual DSS?
Mr. Quevauviller sees the River Basin as the main level where decisions have to be made. Local needs are difficult to cover.
From his point of view it would also be useful to build up a DSS at EU level (which could be done in a more extensive way) to support policy decisions
He also sees it as important to clarify how the DSS can be used to bridge the gap between water managers and policy makers, (that was made evident again at the HarmoniCA conference).

Appendix

Workshop Agenda

	Presentation	Time (ca. min.)
Welcome	Thomas Horlitz	5
General Introduction to eurolimpacs – information system and end user strategy	Luce Jacovella	20
Overview: Tools for Catchment Management and Decision Support	Conor Linstead	15
End-user's requirements regarding a water management DSS - results from interviews/questionnaires in 6 EU-memberstates	Thomas Horlitz	25
Lessons from the Elbe-DSS	Sebastian Kofalk	35
(break)		30
Purpose, goals and design of the euro-limpacs DSS	Conor Linstead / Hongyang Chen	45
Discussion. Comments, requirements from stakeholders / potential end-users in the auditory	Chair: Thomas Horlitz	60
Summary, Conclusions	Thomas Horlitz	5

Participants

Name	Organisation	e-mail
Conor Linstead	SWIMMER, University of Liverpool	Conor.linstead@liverpool.ac.uk
Hongyan Chen	SWIMMER, University of Liverpool	Hongyan.chen@liverpool.ac.uk
Tor Haakon Bakken	Norwegian Institute for Water Research NIVA	Tor.bakken@niva.de
Frédérique Caille	University of Barcelona (Euro-limpacs)	Frederique.caille@uab.es
Cazacu Constantin	University of Bukarest	costica@bio.bio.unibuc.ro
Ron Janssen	IVM, University of Amsterdam	e.ron.janssen@ivm.falw.vu.nl
Luce Jacovella	University College London	l.jacovella@ucl.ac.uk
Thomas Horlitz	Entera, Hannover, Germany	horlitz@entera.de
Achim Sander	Entera, Hannover, Germany	sander@entera.de
Sebastian Kofalk	German Federal Institute of Hydrology (BfG)	kofalk@bafg.de
Mariele Evers	University of Lüneburg, Water Management and Environmental Technologies	evers@uni-lueneburg.de
Tyra Risnes Hoyas	County governor of Ostfold, Norway	trh@fmos.no
Helmut Fischer	German Federal Institute of Hydrology (BfG)	fischer@bafg.de
Magdalena Marinescu	National Administration "Romanian Waters", ARGES – Vedea Pitesti Branch	Mady.marinescu@agwater.ro
Malgorzata Loga	Warsaw University of Technologa	Malgorzata.loga@is.pw.edu.pl
Michael Rode	UfZ, Deo. Hydrological Modelling Brückstr. 3a, 39108 Magdeburg	Michael.rode@ufz.de
Nils Bull	Copenhagen County, DK	nilbul@kbhamt.dk
Glen George	CEH, Lancaster, UK	dgg@ceh.ac.uk
Ulrich Wolf-Schumann	Hydrotec, D 52066 Aachen	uws@hydrotec.de
Michiel Blind	Institute for Inland Water Management and Waste Water Treatment RIZA	m.blind@riza.rws.minvenw.nl
Marc Naura	Environment Agency (?, where?) + University of Southampton	Marc.naura@soton.ac.uk