Update on QR in Ecology

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The Education and Training Task Group is working on two initiatives that grew out of the Jena, Germany, "Qualitative Reasoning for Stream Ecosystem Recovery" workshop held in Jena, Germany, in March 2003 (see MONET Newsletter, Issue 3). The first initiative was to prepare a proposal for a NATO Advanced Research Workshop. The workshop would bring together stream ecologists from around Europe to present QR models on specific stream ecology problems, culminating in a book about QR and ecology. If funded (decision also due early 2004), the workshop will occur in May 2004 in Tulcea, Romania. The other initiative developed from members of the Task Group's unsuccessful application under the EU's Sixth Framework Programme. The members of that consortium from Germany, the Netherlands, Brazil, Austria, Bulgaria, Romania and the UK got together to further refine the goals of the stream ecology initiative, and align them better with both EU and Task Group needs. This process lead to a much stronger proposal, submitted under FP6's second call: REDIME (Qualitative Reasoning for Education and Decision Support: Integrated Modelling Environment for Understanding Sustainable Development and Restoration of River Ecosystems).

The proposal answers the EU's call for educational programmes to facilitate implementation of the EU's *Strategy* for Sustainable Development. The project is a multidisciplinaty blend of software, models, and curricula. Specifically, REDIME will develop an Integrated Modelling Environment so experts and non-experts alike can model river ecosystems and the effects of natural and artificial pressures on them. The goal is better involvement of stakeholders in the decision-making process (see Figure 1). To achieve this goal, REDIME will teach stakeholders (companies, citizens, etc.) to construct and run model simulations. Users will assemble model fragments like building blocks to form models, run simulations to see the results of their work, and develop better understanding of ecology in the process.
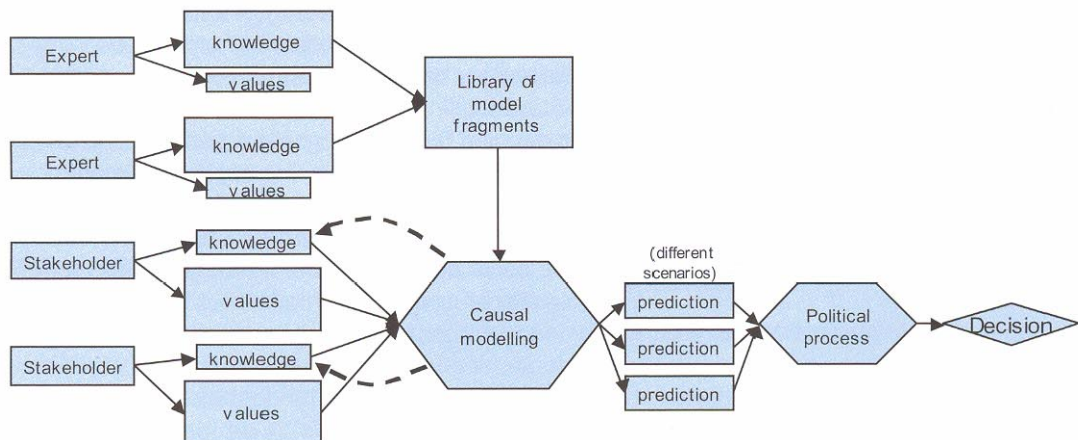

Figure 1. The REDIME project would empower stakeholders by developing tools that formalise expert knowledge into a system where stakeholders can build causal models to develop understanding, further reducing conflict and promoting more equitable decisions.

The important technological aims of REDIME are to enhance existing software to make it user-friendly. Researchers at University of Amsterdam will be hard at work developing the software's front end to make this ambitious goal possible, as well as developing a database structure so domain experts can share and exchange model fragments. Ecologists at University of Jena (Germany), University of Hull (UK), University of Brasilia, the University of Natural Resources and Applied Life Sciences (Austria), Bulgarian Academy of Sciences, and the Danube Delta National Institute (Romania) will formalize the domain knowledge that goes into the modeling building blocks. Finally, specialists in science education and stakeholder involvement at the University of Brasilia and University of Jena will develop the curricula to teach these new tools to stakeholders.

Our plan is that software technologists, ecologists and educators will work in close collaboration with stakeholders and decision makers to optimize REDIME products so the complex data on environmental, societal and economic influences and effects on rivers is presented in a form that can be understood by almost any end-user. Important for the EU is our plan that tools, knowledge and curricula developed by REDIME will be disseminated to a wide audience of stakeholders, decision makers and environmental consulting firms to ensure that the products of REDIME are fully exploited beyond the duration of the project.

We can now announce that this project has been successfully funded.