

Envirolink Tools Project – DSS Web Directory: Overview

Give an overall description of the tool to be developed

We will produce a searchable web-based directory of existing computer spatial simulation models and other, nonspatial decision support systems (DSS) for environmental and resource management strategic or policy decision-making by regional councils (see Appendix 1 for a preliminary list). The directory will provide standardised key information for each DSS (metadata, refer to Appendix 2) and will also include examples of how each DSS has been used and applied by regional councils or other agencies. The directory will be designed to allow for the required flexibility to regularly review, update and add new DSS.

An outline of the environmental problem that requires the tool

Several computer-based spatial simulation modelling tools have been developed for and are available to regional councils. However, there is limited up-take. Barriers for uptake include¹: 1. Inability to assess whether the model is useful and misunderstanding of purpose and potential use (e.g. lack of case studies, applied examples); 2. Lack of access and availability; 3. Cost of models – data requirements, design and build, operational; 4. Lack of in-house capacity and capability. There is also a need to transfer models developed for one region to other regions. In addition, there is a range of nonspatial system analysis and evaluation tools for use in supporting environmental management policy decision-making, particularly in the context of the need to assess policy options and to evaluate the effectiveness of policies under sections 32 and 35 of the RMA.

Any past research on which the tool is based

The project builds upon work undertaken by EERNZ (Sustainable Pathway 2 FRST Project) and by LCR (Envirolink Workshops July 2009² and Envirolink Workshop 15 Sept 2010³). One of the recommendations of the latter workshop was to “*expand the directory of decision support systems started in this project and make it web-based. The current situation is undesirable, a better approach must be developed that will increase the use and application of existing integrated decision support systems and foster coordinated development and delivery of future integrated DSS for the benefit of all of New Zealand*”. This is what we aim to achieve.

The Directory will also link to ongoing work undertaken by the Ministry of Science and Innovation (Nationally Significant Databases) on models and the critical datasets underpinning them. The proposed directory will also meet Government’s Open Data Access policy (NZGOAL) that is supported by regional councils (RC/RMG). A link to the National Advisory Group on the Development and Use of Spatial Planning Tools consisting of central and local government practitioners and users of such tools has also been made.

Immediate and future benefits that will result from the use of the tool

A directory that provides up-to-date access to the availability of models and other DSS, including examples and case studies of how they are used, will assist in building council capability and capacity and facilitate the up-take and use of available DSS and so enhance knowledge and

¹ Massey University, 2011. Survey of regional councils (www.sustainablepathways.org.nz/project-outputs/publications/), and Envirolink Sept 2010.

² Overview of Catchment Scale Nutrient Modelling in New Zealand, Envirolink report #769 (<http://www.envirolink.govt.nz/PageFiles/80/769-HBRC113.pdf>)

³ LCR 2011: Integrated Decision Support Systems Workshop: Summary and Recommendations, Envirolink Project #892, in press

practice in strategic environmental management decision-making. The benefits of having a nationally coordinated and consistently documented directory of spatial models and other DSS underpinned by practical examples include:

- Increased use of modern technology (GIS, data visualisation, 3-D techniques)
- Facilitating information and knowledge sharing (open data access) and ongoing interaction among policy makers and researchers
- Improved uptake of existing and new research outcomes and more integrated management (better planning and decision-making)
- Evidence-based decision-making (better use of existing data, information and knowledge)
- Futures thinking (understanding systemic complexity, uncertainties and risks at a range of scales, modelling, scenario development, futures simulation, evaluation and forecasting)
- Assist environmental management and policy development (e.g. identify nature and extent of issues, understand systemic context and dynamics, explore alternative policy options, explore consequences of policy decisions and trade-offs).
- Meet new spatial planning requirements (Auckland Spatial Plan, RMA Reform Phase 2).

The benefits will realise immediately upon completion of the project and will be ongoing (the directory will be regularly updated).

Any target stakeholder groups that will be directly involved/affected by the tool

The project leader and sub-contractors will work closely with the two project champions (Steve Markham, Tasman DC; Beat Huser, Environment Waikato). In turn the champions will engage, through the Policy Managers Special Interest Group (SIG) and other relevant SIGs, with the principal target groups: strategic and resource planners and policy analysts, and resource scientists.

Council commitment to the tools implementation

The need for integrated DSS and improved technology and knowledge transfer of existing spatial models and other DSS has been clearly identified in Envirolink's Research Strategy and the 'Regional Council Critical Issues and Research Needs' document (www.envirolink.govt.nz/Research-Strategy). The proposal has the support of the Policy Managers Special Interest Group. Recent Envirolink workshops have identified the establishment of an inventory of spatial models and other DSS as a key priority^{4,5}. Promotion of the directory will use existing networks (Envirolink/SIGs, RMG, LGNZ/SOLGM, Quality Planning website).

Council co-funding during and after the project (promotion, training, maintenance) includes: EW 15k Tasman 4k.

⁴ Overview of Catchment Scale Nutrient Modelling in New Zealand (<http://www.envirolink.govt.nz/PageFiles/80/769-HBRC113.pdf>)

⁵ LCR 2011: Integrated Decision Support Systems Workshop: Summary and Recommendations, Envirolink Project #892, in press