

FRST Achievement Report for 'Creating Futures' Annual Update 2009/10 - Final Report

The 4-year Programme ENVW0601 commenced in July 2006 and has been extended by 3 months to be completed by 30 September 2010. This report summarises progress in year 4 (1 July 2009 to 30 June 2010).

Project Management

Three Project Team meetings were held, plus several objective 1 and 2 meetings and regular informal meetings between Project Leader, Science Leader and Objectives Leaders. A high-level Governance Group (CEs/Senior Managers from LCR, NIWA, AgResearch and EW) was established in 2008/09 and met four times during the year. The Advisory Group consisting of potential end users from central and local government met in March with another meeting scheduled in August 2010. The project has established linkages and working relationship with a range of other research projects, stakeholders and end users who are regularly being informed about research activities. All project outputs, including agendas and minutes of meetings are available from the website (www.creatingfutures.org.nz).

1. PROGRESS REPORTING

1.1 Key Activities

The project has two specific objectives:

- 1) Developing processes to enable evaluation, deliberation and choice of alternative futures for social, environmental, economic and cultural changes through the use of scenario analysis linked to multi-criteria evaluation frameworks.
- 2) Developing an integrated spatial decision support system (ISDSS) that links economic, environmental and social components, and quantitatively forecasts plausible future scenarios of regional development as part of long-term integrated planning.

This up-date describes relevant milestones for 2009/10 and associated activities and achievements. All milestones scheduled for the first three years of the project have been completed (refer to previous annual and quarterly reports).

Objective 1 – Milestones for 2009/10 (as per contract)

Milestone	Description	Outputs	Due Date
1.1.6	Deliberation Matrix was used to evaluate and deliberate scenarios based on information generated by the ISDSS.	<ol style="list-style-type: none"> 1) Stakeholders have identified areas of agreement and conflict of opinion and trade offs required to meet scenarios and have made transparent the assumptions underlying the choice of indicator. 2) Draft paper that examines the difference between the evaluation and deliberation of scenarios pre- and post-ISDSS information has been prepared for submission to a peer-reviewed journal. 	31 Dec 2009

Scenario and Deliberation tools developed in the programme were applied to policy planning for the Future Proof (FP) project (<http://www.futureproof.org.nz/page>) in a way that allowed exploration and validation of the scenarios developed by the FP team for their strategy.

The linking of qualitative scenario development with quantitative modelling through the use of the Waikato Integrated Scenario Explorer (WISE – see Objective 2) was mediated through the use of the Deliberation Matrix tool and process. A guideline for scenario development was produced for use by planners. An inventory of the indicators utilised through out the deliberation process has been developed for use by planners. A guideline for use of the Deliberation Matrix and the deliberation process has been developed for use by planners. An invitation was issued by MfE to profile the use of the deliberation process to a cross government department workshop (May 2010).

Reports:

- Susan Bates: Creating Futures Scenarios: A user guide (June 2010), EW doc 1734491
- Steven Kelly; M.E. Wedderburn: Informing decision-making through deliberative approaches: A procedural guideline (June 2010)
- Bruce Small, Steven Kelly, M.E. Wedderburn: Developing context specific indicators for deliberative approaches (June 2010)
- Kate Delaney: Refresher on horizon scanning and scenario analysis for Environment Waikato (March 2010) – co-funding, EW doc #1861833
- Daniel Rutledge: Translating the qualitative Waikato Scenarios into quantitative input for WISE.

1.1.7	Local councils have adopted scenario analysis and the ISDSS into their planning processes.	By 2010, Environment Waikato and at least four district/city councils have been routinely using scenario analysis, the Deliberation Matrix, and the ISDSS pioneered in this project as part of their long-term LTCCPs and statutory planning processes (RPS, Regional/District Plans) and decision-making processes.	30 June 2010
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We have been developing scenario planning and deliberation tools and processes throughout the life of the Creating Futures programme. This year we have integrated the use of the tools and processes to address the real life policy framework using the Future Proof project as a case study (<http://www.futureproof.org.nz/page/5-home>). Policy planners have applied the scenario tools to explore and validate the strategy that they had developed. Using the scenario information and through the use of the Deliberation process they identified key issues of concern and identified strategies to address these issues. They chose a set of values and associated indicators across the four well beings (economic, social, environmental and cultural) and evaluated the performance today and how they thought their strategies would perform. At this point the WISE framework was used to evaluate in a quantitative way the consequences of the strategies in addressing the issues. The learnings that evolved from this were: 1) An increased understanding of the possibilities and limitations of the deliberation process in the context of decision-making, including: providing a means of evaluating competing responsibilities; providing a structure for evaluating multiple scenarios; the possibility of using the process for engaging stakeholders (where time and other constraints allowed). 2) An appreciation of the possibilities and limitations of the WISE model, including: the development of a base level of skills for working with the WISE model; testing the impacts of various scenarios using multiple indicators; demonstrating the impacts of such scenarios over both time and space. 3) A recognition of the significant time and expertise required to effectively employ the deliberation process and test scenarios through WISE.

Reports: See above (milestone 1.1.6)

Objective 2 – Milestones for 2009/10 (as per contract)

Milestone	Description	Outputs	Due Date
1.2.6	ISDSS optimisation completed.	1) ISDSS has been modified based on tester feedback and runs robustly in end-user setting (i.e. almost never crashes) 2) End-users testing ISDSS have been interviewed and changes have been made where feasible or noted in list of possible enhancements for future versions. 3) User manual has been revised based on user feedback and is complete. 4) Draft manuscript on ISDSS development has been prepared for submission to peer-reviewed journal.	30 April 2010

All data for the ISDSS have been prepared and collated and the various system components have been linked together, covering an economy-environment model, climate, demography, hydrology, water quality, zoning, terrestrial biodiversity, and the land use change model. An integrated beta-version of the ISDSS, named Waikato Integrated Scenario Explorer (WISE), was released in November 2009, and was extensively calibrated, validated and tested by the modellers as well as by potential end users in a series of workshops. Feedback was collated and the resulting list of suggested improvements and enhancements was prioritised using a set of agreed criteria. The final version (WISE 1.1) incorporating end-user feedback and comments from the modellers was released in July 2010. A WISE Technical Specifications Report, Validation reports, detailed Metadata Sheets for all model components and a User Manual with examples have been prepared.

Reports:

- Daniel Rutledge *et al.*: WISE: Waikato Integrated Scenario Explorer, Version 1.1. Technical Specification Report (June 2010), EW doc #1686550
- Daniel Rutledge *et al.*: Validation reports and Metadata Sheets (June 2010)
- Hedwig van Delden *et al.*: WISE User Manual (June 2010), EW doc #1583896
- Valerie Snow: Review of Dairy Model (June 2010) - co-funding, EW doc #1703651
- Environmental Management Services: Waikato Region Land Use / Zoning Matrix (November 2009) – co-funding, EW doc #1589639.

1.2.7	Application of Spatial Decision Support System	Environment Waikato and at least four district/city councils (in the Waikato and other regions) have successfully tested and trialled the ISDSS and have expressed support for its ongoing use for integrated strategic and statutory planning and decision-making.	30 June 2010
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Two case studies engaging potential end users of WISE have been undertaken: 1) Policy development for EW Regional Policy Statement (RPS); 2) Growth options for Hamilton and surrounding councils (Future Proof). The RPS case study involved workshops with staff, councillors and iwi to explore implications of alternative policies to protect high quality soils. The Future Proof case study explored consequences of alternative policies to accommodate population growth, including high density growth, protection of high quality soils, and protection of significant natural areas (see also Objective 1 above). Both case studies were documented and relevant outputs included in the User Manual and training exercises document as practical examples of how WISE can be applied in a planning and policy context. A document was produced outlining the current policy and decision-making processes used by at councils (EW) and identifying how the tools developed by this programme could be effectively integrated into council processes. The document discusses both opportunities and challenges and makes recommendations for a way forward to successfully apply and use the tools.

Reports:

- Tony Fenton: Creating Futures: Regional Policy Development Processes - Opportunities for Use of Creating Futures Tools. Alchemists Ltd, March 2010, co-funding, EW doc#1626965
- Hedwig van Delden: Examples of scenario development – international best practice and lessons learnt (in prep).
- Derek Phyn: Guidelines for Quantification and Exploration of Scenarios Using WISE (in prep).

Next Steps

Additional Funding:

Work has started on the allocation and use of the additional funding (\$100k) as a result of extending the project for another 3 months (1 July to 30 Sept 2010). The project team has decided not to allocate the funding on a pro-rata basis but to prioritise and fund some key tasks, including (total cost includes 50k EW co-funding):

- 1) 30k for Zoning Tool (contract signed, completion 31 July 2010)
- 2) 15k for Scoping study to link Hydrology with WRDEEM (contract signed, completion 31 Sept 2010)
- 3) 35k for WISE GUI improvement package (Help function etc.), (contract signed - completion 31 July 2010)
- 4) 20k for EW Regional Policy Statement support by project partners (work brief in prep)
- 5) 20k for Creating Futures advice and training by project partners (work brief in prep).
- 6) 30k for Strategy development: this will explore options for the dissemination and further development of the CF tools to other regions (work brief in prep).

Links to other projects:

A number of project partners (EW, RIKS, MEL, EERNZ/Massey University) are also involved in the 6-year FRST programme Sustainable Futures 2 (SP2), which started in October 2009 and aims to develop integrated spatial DSS for urban systems working with Auckland and Wellington councils. The Local Government (Auckland Council) Amendment Act 2010 requires the new Auckland Council to develop a Spatial Plan.

Environment Waikato Commitment:

EW's Long Term Plan 2009-2119 has approved funding totalling \$2.3M over the next ten years to ensure ongoing maintenance, up-dating, further improvement and appropriate use of the project tools, including WISE. Processes for regular up-dating of data and models underpinning WISE will be agreed with data and knowledge providers. It also includes staff training in the use of the tools and building capability and capacity. While this is primarily targeted to the Waikato region, options to transfer the project tools to other regions for the benefit of councils and other potential users will be investigated, for example:

- Feasibility and funding options to transfer WISE to other regions (and other users)
- Ongoing maintenance and up-date of key national/regional datasets underpinning WISE
- Ongoing research to improve the current tools (e.g. further FRST funding)
- Enhancing the capability and capacity of local and central government for integrated spatial planning.

Service Agreement with project partners:

EW has developed agreements with the Creating Futures project partners to provide ongoing services, including up-dating of data and models, training, advise and consultancy support, further enhancements of WISE, relevant research etc. These agreements will be of a general nature with specific and agreed work briefs added as Schedules.

National Advisory Board:

It is proposed to establish a 'National Advisory Board for the Development and Use of Integrated Planning Tools'. This would build on the current Creating Futures Advisory Group and link closely with the end user needs for the Sustainable Pathway 2 (and possibly other) projects. The purpose is to provide a coordinated approach to the development and application of tools for integrated, long term, spatial planning in the New Zealand public sector.