

REGIONAL POLICY MANAGERS SPECIAL INTEREST GROUP RESEARCH STRATEGY

August 2015

1 Strategic approach to regional environmental management research

Goal 1

Environmental management research is systemically integrated across all functional dimensions of regional environmental management, including for all relevant sciences, decision-making including evaluation and policy, and operational management, to improve performance across the whole of management

Explanation

In the development of the regional sector's research science & technology (RS&T) strategy, bottom-up priorities from different disciplinary groups has not enabled a sufficient understanding of the needed scope of environmental management-related research. This is considered to stem from particular science and technology-driven needs from most users, without the sector's strategy seeing the potential value of research from a broader perspective to help improve performance in the end-to-end cycle of regional environmental management.

This broader perspective relies on an understanding of the scope of relevant research as needing to extend both across the applied sciences that inform any environmental issue, and across the design and delivery of management policy and other management solutions, through regulatory and operational services. This broad scope of environmental management research means that "research" is broader than "science" (as the subject not the method) and needs to encompass "policy" (the decision framework). The purpose of research across this broad scope should seek to improve understanding and efficacy of dealing with management problems and solutions across a wide range of scales, settings and resources.

Providers of research services are eager to deal in systemic or post-normal science in responding to the sector's RS&T priorities; however the regional sector as research users appears stuck in the disciplinary world. The formulation of the sector's RS&T strategy is at risk of remaining compartmentalised. There seems to be a varying appreciation of research needs relating to evaluation, policy and decision operations in the current individual SIG strategies. This probably reflects the practice that science and policy activity for environmental management may be separately carried out by different disciplinary practitioners, and this is maintained within the current pattern of SIGs. The risk is that in formulating research priorities, potential policy may be poorly informed by science-based effort, as the policy or decision context for the science inquiry may not be adequately built into the research. This can raise questions of relevance or usefulness of some research from a policy or decision perspective.

Commonly in the sector's SIGs, research is seen exclusively as (largely natural) science understanding of problems, issues or risks without carrying through into research to advance policy or other decisions for potential solutions, at either framework or tool levels. But as well, research into policy or decision frameworks including evaluation, must have an understanding of the nature or source of any problem in a systemic science context, and how systemic technology such as dynamic modelling, or social value-setting methods may inform the decision domain.

However, the regional policy managers SIG sees that a key symptom of the need for more systemic research is the poor understanding or prioritising in the RS&T strategy to date of research into policy and decision design and delivery support systems. Such systemic research includes the need to support both the setting and accounting for community values for all aspects of our environment as natural services and stocks, and the design and evaluation of solutions packages including policy to complexly interlinked environmental issues.

We are also mindful of research delivery issues, under the current and foreseeable research funding and provider landscape. We note that decisions on the form of research or on the provider have not in the past always adequately accounted for all regional council user perspectives. This may lead over time to inefficient investment with overlapping or missing elements. There are capture risks, where in defining the scope of need, the regional sector may lack an adequate national perspective or be internally captured by a particular disciplinary perspective. There is also the risk of capture by particular providers which may not be fit for purpose.

Priority 1

In the current reformulation of the regional sector's RS&T strategy, account for:

- the scope of research needs in a strategically integrated, end-to-end approach to regional environmental management;
- the limitations of priority-setting from a disciplinary-led arrangement of individual SIG research strategies;
- a reframed role of and need for research into and in support of decision-making systems, including community values-setting and accounting, and management policy design and evaluation, as distinct from but integrated with research into understanding of environmental issues.

2 Environmental management policy research priorities

Goal 2

Research informs frameworks, methods, tools and community inquiry and decision processes for setting and accounting for all forms of social values across the regional environment and the design and evaluation of successfully deliverable policy and other management decisions

Explanation

There are great challenges in integrating different frameworks and associated methods for understanding and accounting for the dynamics of social values held for resources and the environment. There is a wide spectrum of uses of environmental services and resources stocks having ecosystem, economic, social and cultural dimensions of value. Fitting all such values into any single framework for understanding across these dimensions is problematic; as each of such dimensions has a different scope of relevance, and the time-spatial dynamics of natural and utilised systems is complex and is subject to a range of uncertainties, as to systemic behaviours, information and social risks. There are different methods of valuing and accounting in a range of inquiry settings, with variable integration and tool development is limited at the most needed time-spatial scales.

What is also needed is research into the development of accounting systems across natural resource and environmental services stocks and flows, that capture both total and marginal values (the value of the next change or effect) in time-spatial context important for each region, and the associated needs for data system development. These systems need to integrate monetary values (use of dollar accounting, resolved to present value) with relative social values unable to be rendered to a monetary denominator.

A similar challenge unfolds for research to understand and integrate or otherwise resolve and improve the range of policy development methods and tools for the design and evaluation of policy or other decision responses to environmental management issues. This has a key driver need in the current law (RMA sections 32, 104) requiring robust evaluations of all decisions in both policy and consenting, yet tools and practices are fragmented, with much at stake in choice of efforts and approaches. Design of policy instruments is a large practice under current legislation but this practice is very poorly informed by research into forms of legal instruments that can be crafted into workable and acceptable policy responses.

Closely linked with values-setting and policy or other decision design, is the need to resolve differing levels of value held in communities for any set of utilisation outcomes across the environment, reflected as effects that are marginal changes in different valuing, especially where there are perceived to be risks. There is a pressing need for research into better approaches to collective inquiries into issues at most community scales, where engagement and collaboration are being trialled in order to maximise conflict resolution gains that might translate into successful outcomes for all social valuing.

Community planning processes try to iterate problems and solutions development and delivery but the research need is useful understanding of how relationships within and between community collectives and institutions may work in these processes, and how the use of frameworks and methods of problem valuing and solutions evaluation can support such efforts.

A further need is an improved legal basis for environmental policy outcomes and instruments derived from the scope of sustainable management, and more broadly enabling instrumental development across the spectrum of settings and issues. While this is arguably a government priority, the regional sector has a key stake in an enhanced range of policy tools both in and under the law.

Priority 2A

Research to develop operable approaches to appropriately scaled and scoped, systemic dynamic assessments of resources or aspects of the environment as stocks and services, that explicitly address complexities and uncertainties including risks, and including:

- **frameworks, methods and tools for identifying, sizing, and integrating community values for uses of environmental services and resources stocks across ecosystem, economic, social and cultural dimensions of value, including time-spatial dynamics**
- **methods and tools for accounting for community values held for services, stocks and flows that may not be reducible to a monetary denominator, alongside monetary cost and benefit effects of marginal changes in such values, to use in evaluating policy or other decision options**

Priority 2B

Research to develop and improve the application of the range of policy development methods, tools and processes for the design and evaluation of policy or other decision responses to environmental management issues, including:

- **Design and evaluation of allocation policy or other decision options by reference to the suite of marginal changes in all relevant dimensions of value within widely varying environmental situations, iterated with**
- **Design and evaluation of policy instruments informed by research into forms of legal instruments that can be crafted into workable and acceptable policy responses, drawing on practice efforts to date in RMA plan and policy design and evaluation to improve tuning of currently available or applied methods and instruments to the range of different policy issues**
- **Social processes for iterating problems and solutions development and delivery (eg. collaborative planning) including relationships within and between social collectives and institutions to help improve practice success in environmental policy development**
- **Legal systems to improve the sustainable management bases for current resource law and policy, and the scope for improved instruments in or under the law for resource allocation and use.**

3 Rationale for research priorities

This broad set of policy-relevant research priorities forming our strategy are:

- **strategic** in being for improving environmental management across a wide scope of practice.
- fundamentally **science-based** (in method); and though not directly about specific environmental sciences (as the subject); they are
- about the **decision** outputs and **policy** tools and processes of environmental management, as opposed to science inquiries to generally inform such management.

These two features of policy-relevant research are closely linked. The policy managers SIG readily supports and relies on the research effort into management implications of areas of science content. But we also want to see more sense made by research that applies across the environment, of the socio-economic and policy decision perspectives as well as the biophysical, of management issues and solutions.

Annex: History of Policy Managers SIG research efforts

In 2007 the policy managers SIG commissioned research for guidance on evaluating RMA policy and plan effectiveness, as a key policy-relevant priority. This work sat outside any sector research strategy.

In 2011 as part of the regions' science strategy review, the policy managers SIG sought priority research on a number of resource management themes (water, urban, hazards, aspects of coastal management) as they were significant policy issues for which resolved policy was problematic around NZ. We also sought research into some key aspects of policy development:

- resource and environmental services valuation, in order to compare both market and nonmarket resource values, where inter-related risks needed management; and
- useful approaches to policy evaluation required under RMA. The decision support system (DSS) directory as an Envirolink tools output, falls neatly into this need, but the directory is poorly developed in both environmental services valuation and policy evaluation DSSs.

In 2012, we sought a tools grant for work on certain economic tools for policy evaluation; this was unsuccessful through the limited value for money of the focus on one tool, set against understanding of the scope of evaluation needs.

In 2014, in the Ministry for the Environment's (MFE) development of practice guidance on working under the requirements of the Resource Management Act's section 32, we commented on the dearth of research to support resource management policy-making. We promoted the development of a more refined range of environmental policy evaluation frameworks, methods and tools, and to help build more decision-relevant data management under resource science. This advocacy was made in the face of the huge investment for monitoring and reporting by our resource science community into environmental states and risks (eg. the current scope of LAWA website). Our advice was built into MFE's 2014 s 32 guidance published end 2014 but only as far as current knowledge and the fiscal constraints of MFE allowed.

More recently MFE has set up practitioner networks for collaborative and economic aspects of decision-making in freshwater management; several SIGs contribute participants to this. This government work programme may help in priority-setting for policy and decision research across more of the environment than freshwater and catchments.

This present research strategy was reviewed by the Policy Managers SIG in July 2015 following the development of positions for a workshop on regional sector priorities for research in March 2015. It is an articulation of some fundamental needs for environmental research, in a rapidly developing need for designing and delivering policy and other forms of decisions for integrating within and across current and emerging environmental risks, set within a sustainable management framework.

Any inquiries from researchers or potential providers about this strategy are welcome and in the first instance contact Steve Markham at steve.markham@tasman.govt.nz as the present convener for this SIG.