Valuing Learning Networks in Enhancing Sustainable Practice

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Abstract
Collaboration is a key principle for advancing sustainable practice and transitioning to a green economy, and as such requires integration within organisations, between organisations and amongst the professions who play a key role. Learning networks and communities of practice, as examples of collaborative methods, are useful ways of bringing together people from a diverse range of disciplines to exchange and disseminate knowledge to support more sustainable practice. Networks can also become critical elements of research programmes where the intent is to ensure that research supports practitioners to mainstream more sustainable practices. Two of the authors established and ran a learning network as part of a six-year research programme focused on improving urban development policies and practices. A recent evaluation of the network by the third author drew out some interesting lessons for those engaged in multi-disciplinary research projects. Drawing on both theory and practice, this paper explores the role of learning networks in advancing sustainable practice.

Introduction
Urban development is typically shaped by multiple participants, perspectives and processes. The introduction of new practices to enhance sustainable outcomes requires the engagement of a range of participants in order to shift both policy and practice. A critical element in changing practice is the need to secure the support of professionals and others who are able to implement new approaches to current practices that often involve challenging long-held assumptions. The authors of this paper consider this to be a key element of any attempts to transition to a green economy.

This perspective informed the design of a major research programme addressing aspects of urban sustainability – a programme in which two of the authors of this paper were key participants. The six-year research programme (2003 – 2009) entitled Low Impact Urban Design and Development (LIUDD), funded by the New Zealand Foundation for Research, Science and Technology, recognised a need to collaborate and work with multiple end users of the research. A national taskforce of leading practitioners was established early on in the programme to work with researchers. It quickly became a key tool in disseminating knowledge generated from the programme but, just as importantly, for the researchers and practitioners to learn from each other. Towards the end of the research period a decision was made to evaluate the role of this network in facilitating the shift towards the adoption of low impact urban design and development practices (Trotman, 2009). The paper reports on the operation of the taskforce, presents material from the evaluation and concludes with some reflections on the role of networks in advancing sustainable practice.

LIUDD and the National Task Force
In New Zealand, the term Low Impact Urban Design and Development (LIUDD) has been coined to embrace what is encompassed by Low Impact Design (LID) in the United States and Water Sensitive Urban Design (WSUD) in Australia. However, it goes beyond these approaches to deliberately extend and strengthen connections

with the fields of urban design and sustainable design. LIUDD aims to avoid a wide range of adverse effects of a physicochemical, biodiversity, social, economic and amenity nature resulting from conventional urban development, at the same time protecting aquatic and terrestrial ecological integrity (van Roon and Knight, 2004).

LIUDD comprises both a design approach and a range of structural techniques that can be applied to urban development and stormwater management. As a design approach, LIUDD acknowledges the value of natural landforms and environmental resources and can facilitate integrated decision-making processes to maximise the potential for multiple urban outcomes. Given that land development often results in modifications to the land surface, LIUDD structural techniques aim to utilise natural processes such as vegetation and soil media to provide stormwater management solutions and add value to urban environments through enhancing habitat, biodiversity, landscaping, amenity, recreational opportunities and cultural identity.

The LIUDD research programme recognised that transformation of urban development practices requires an integrated and holistic approach. To this end the research design adopted a multi-institutional and multi-disciplinary approach encompassing research expertise in hydrology, environmental engineering, aquatic ecology, soil sciences, economics, planning, geography and social anthropology. Landcare Research Ltd, a Crown research institute, led the multi-disciplinary and multi-institutional programme. The programme had four themes organised as five objectives. The themes addressed the human and social dimensions of 'buy-in', the application of innovative science and design, development of new economic tools and the implementation of LIUDD through changing policies and practices. Researchers from The University of Auckland were responsible for objective five that examined the need to change policies and practices.

The National Task Force (NTF) was a key instrument in engaging with stakeholders and end users. It consisted initially of senior people involved in relevant policy-making and strategic consultancy within and outside of government (Dixon and Sharp, 2007). Over time the group become more dominated by practitioners who were interested in LIUDD policy and practices. While a core group of 15-20 attended, participation by others fluctuated. Approximately 35 participants from 15 organisations were involved in the NTF over its life span. The geographical spread of participants also increased over time. The approach to membership involved organic recruiting, from contacts and networks of the NTF co-ordinator as well as people approaching the co-ordinator as word spread about the network.

When the NTF was established its role was to help develop, test and implement guidelines for LIUDD to support local government policy, plans and practices and identify incentives to help developers and consumers/householders to implement LIUDD. As the research progressed, the NTF became a key focus for the whole programme and assumed much more significance as a research instrument than originally anticipated when the programme was designed. There was a significant turning point midway in the operation of the NTF when the focus of the research programme shifted distinctly away from making a case for LIUDD towards its implementation. The shift in focus was driven by the needs of the end users who sought practical guidance on implementation. It indicates that sustainable practice was becoming more accepted and practitioners were seeking specific advice and support on making LIUDD part of 'business-as-usual'. No longer were the researchers required to be making the case for change, rather the benefits – economic, social, ecological – of more sustainable practices were seen as outweighing traditional, and often outmoded, ways of doing things.

The NTF met for a day every six months. The programme funded the attendance of some out-of-town participants so that leading practitioners could contribute their expertise. The agenda for the day would include reports on research in progress and opportunities for participants to share experiences of LIUDD implementation. Comments were also sought from participants on the on-going research agenda. The opportunity to review contracted outputs of the programme every two years provided some flexibility to shape tasks to suit changing circumstances and the NTF was consulted on priorities and directions. The approach of setting broad parameters for the NTF, while allowing it to evolve organically, aligns with international research on networks that emphasises their dynamic nature and the difficulty of predetermining their trajectory and outcomes.

Theoretical context

Networking occurs when people join together around a common concern, often to catalyse innovation and practical change (Creech and Willard, 2001:19). It involves building relationships in order to learn, and to share knowledge, goods and experiences (see for example Plucknett, 1990; Keijzel, Ornemark and Engel, 2006). Networking involves a "*diffuse social process which [often] leads to new or modified problem definitions and practical solutions*" (Cummings and van Zee, 2005:14).

Networking is characterised by four key activities: information exchange, learning, advocacy and network management. Network research is taking place across many disciplines, from physics to philosophy (Bender-deMoll, 2008:6). It ranges from quantitative attempts to map, describe and predict network components, to focusing on their functions, processes and participant experiences. A wide range of types and functions of networks exist.

A learning network is designed to bring people with a common interest together in order to learn, share, modify existing practices and policies and create new ones It involves collaborative learning (Allen and Kilvington, 2005) and can result in a 'community of practice' (Wenger, 2005). Learning networks tend to have open membership and fluid borders. Interest in learning networks has increased in recent years as global exchange becomes easier, the complexity and urgency of worldwide problems increase and frustration exists regarding the failures of traditional approaches (Creech and Willard, 2001).

Key issues for learning networks are their inclusiveness and diversity, determining how membership will be managed and how the learning process will happen. Characteristics of successful networking for learning are relevance; a clear focus, trust and openness; ensuring members have the skills and resources to participate; on-going commitment of members; a shared problem or goal to achieve; selection of a highly competent network organiser and the contribution of alternative views and information (Engel and van Zee, 2004; Keijzel *et al.,* 2006).

Risks for networks include potential domination by strong individuals or organisations, difficulties in managing vested interests, a research environment that can be unsupportive of collaboration, problems in gathering and analysing network data and lack of guidance on how to create and read network maps (Keijzel *et al*., 2006; Dixon and Sharp, 2007).

International good practice in evaluation of learning networks can be summarised as setting clear objectives, embedding and resourcing monitoring and evaluation processes from the start, valuing relationships and processes, including all network members, incorporating qualitative and quantitative methods and indicators at the

outset, and addressing issues of impact, relevance, effectiveness, efficiency and sustainability (Trotman, 2009).

Evaluation of the NTF

A review of the NTF was not incorporated as part of its original proposal in the research bid. Thus no agreed project goals, measures of success or evaluation plan were developed for it. However, it was decided by programme leaders to undertake this review towards the end of the formal life of the NTF. Methods included a review of relevant documents, a literature review, a workshop session with 13 NTF participants and their individual survey responses, three face-to-face interviews with key NTF participants and stakeholders, six telephone interviews with NTF participants and a two-hour session with the core project group (leaders and NTF co-ordinator) to review draft findings. The research was completed by the end of March 2009.

Findings from the evaluation of the NTF conducted towards the end of the six-year programme revealed some useful insights (Trotman, 2009):

- Key strengths of the NTF were enthusiastic, high quality, consistent coordination and facilitation; good agendas, speakers and presentations; the range of people and disciplines involved; its promotion of integrated approaches and linking of research and practice; its resourcing, the relationships it catalysed, frequency of meetings, facilitation of shared learning, use of case studies and the support of people in mainstreaming LIUDD (i.e., its advocacy function).
- Areas for improvement identified by some participants included a need for a clearer focus, a broader spread of representation on the NTF, stronger connections to the researchers and with the objectives of the wider LIUDD research programme, research that was more connected with practice and presented in a less 'academic' format, greater profiling of the emerging research, and more debate on key topics.
- Overall, the NTF did link research and practice effectively, especially for practitioners. The NTF catalysed significant new research and informed the direction of research within objective five, in particular, but had little perceived influence on the broader LIUDD research programme.
- Research outputs in the programme were quite tightly contracted and research and practice interests sometimes differed, but over time the needs of practice and related issues shaped the NTF agenda more. Practitioners valued the connections with research that in turn supported their professional development, informed their thinking and influenced their work.
- As a learning network, the NTF involved collaborative learning and created a national 'community of practice' around LIUDD. The NTF exemplifies the value of a learning network when the issues involved are complex, innovation and collaboration are needed across disciplines, and there is frustration with conventional approaches and a sense of urgency to catalyse change.
- As with most learning networks the NTF had an open and fluid structure and attempted to involve a wide range of representatives from government to private sector practitioners.
- Overall the NTF rated strongly in relation to international success factors for networks, especially in enthusiastic and competent network management, bringing in alternative views and meeting the needs of its members.

Lessons for the use of learning networks

A learning network is an option to consider when there is a diverse range of disciplines involved, limited options and forums for bringing people together, an impetus for bringing people together, new territory is being charted, innovation is needed and/or there is a desire to connect research and practice more consciously. A critical operational aspect of a successful network is the quality of coordination and network management. Research networks also require a leap of faith as managers need to be able to live with some uncertainty as to the outcomes of a network.

Striking the right balance between organic evolution and a fixed structure is one of the challenges for a learning network. Similarly, finding a balance between the appropriate size and shape of the network is also a challenge, requiring a decision to be made on aiming for a larger scale versus intimacy, or breadth versus depth of networking and interaction. Identifying how membership will work and retaining a core ongoing membership is also important, while allowing for people to come and go. It can also be a challenge to achieve an appropriate mix of participation in a network and maintaining this mix. Other factors that are likely to attract and retain members are sufficient networking time, including informal discussions, showcasing good practice, using case studies and undertaking field trips to look at practical examples of implementation.

The NTF and international experience supports utilising learning networks within research programmes, but as one part of a broader strategy around stakeholder engagement and research and practice integration. Time and effort is needed for researchers and practitioners to understand respective interests, needs and agendas, and how to align these for mutual benefit. If there is no scope to influence the research agenda, a learning network is not an appropriate research tool.

The NTF experience indicates that learning networks have the potential to be very effective in linking research and practice, provided they are well resourced, supported by management and well integrated into the research programme. Based as it is on people, processes and relationships, the difficulty of quantifying the impact and success of a learning network was widely acknowledged by both researchers and participants. The impacts of learning networks are often indirect and subtle; cause and effect can be hard to attribute and it takes time to gauge the impact of networking. Funded programmes can demand indicators of effectiveness but these can be hard to produce in any meaningful way.

On a final note, we observe that the NTF was an important mechanism in the production of and dissemination of a wide range of research outputs emanating from the programme over a five-year period. It played an integral role in influencing the adoption of more sustainable practices in relation to urban development. This was evidenced by amendments to national standards for stormwater management; changes to a range of local government statutory plans at regional and local levels; invitations to speak at numerous professional conferences and workshops, including those of engineers, surveyors, and planners; the inclusion of LIUDD in the operating language of a range of professionals; and, pressure from the development community for LIUDD to be considered best practice in both greenfields and brownfield developments. For us this indicates a significant shift in both policy and practice that exceeded our goals and expectations at the outset of the programme.

Conclusion

In terms of the international guidance on monitoring and evaluating networks, the NTF experience validates the desirability of developing an evaluation plan from the start and building monitoring and reflection processes into the learning process. It

also affirms the need for clear goals and objectives against which to evaluate, utilising qualitative and quantitative methods and indicators, and validating the experience of network participants and the relationships developed. Overall, the NTF was highly valued by participants and considered effective in connecting people in the LIUDD field, in assisting the mainstreaming of LIUDD and ultimately contributing to the adoption of more sustainable approaches to urban development. The NTF experience aligns positively with international research on what constitutes a successful learning network. It supports the use of learning networks as part of research programmes, provided that attention is paid to the core elements of effective networking and genuine commitment exists from programme managers.

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