

Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance

Edited by Örjan Bodin and Christina Prell. 2011. Cambridge University Press, Cambridge University Press, 32 Avenue of the Americas, New York, New York 10013-2473 USA. 376 pages. 115.00 USD. Cloth.

Directed at a senior-level academic audience, this book explores the use of social network theory and analysis for studying social structures in natural resource management such as communities of users, decision makers and institutions. While not a conventional

textbook, my interpretation of the material indicates that the book is more technical than a casual educational read but not so technical that the user could fully understand and replicate the methods used without outside information. The prose style employed is very text

dense, such that the book cannot be considered a quick-reference tool. There are some greyscale diagrams, but overall very little illustration. Nevertheless, the book is welcomed for its timely contribution and collection of studies that use social network analysis (SNA) in natural resource management. Much of the existing body of work using SNA is limited to organisational studies, business studies and other traditional social study areas.

Divided into 14 chapters, there is a balance between background information on SNA, the evolution of social network theory and case studies arranged in sections based on level of network studied: individual, subgroup or network levels. Almost every case study is submitted by different authors, providing multiple voices, opinions, geographies and techniques on how SNA can be applied. Usefully, the editors requested contributors answer the same set of questions reflecting on the use of SNA and their experiences, and these are presented after each case study. However, not every contributor saw fit to answer the questions as phrased, so some reflections are wordy and do not serve for cross-comparison of experience. Indeed, it is most unfortunate that the excellent opportunity for comparison is lost given the relative newness of the use of SNA in ecological governance analysis. Helpfully, each chapter contains an extensive list of references, and there are numerous in-text citations.

The book begins with an overview and discussion of social network analysis and its use in the more conventional social theory arena. While well presented, this introduction is not as simple as other SNA texts and the reader is recommended to be at least familiar with SNA concepts and terminology in order to derive the most benefit. The editors state that '*social network analysis comprises diverse methods for the study of how resources, goods and information flow through particular configurations of social ties*' (page 10). Simply put, social network theory is a social anthropology approach to mapping networks of interconnected actors. It distils complex interaction into a web of nodes and ties, enabling analysis of key connections across a broader social landscape. Given that ecosystems are not confined within human-made geographic or institutional boundaries, but are managed piecemeal within them by these same actors, SNA can be used to map social interaction for improved understanding of effective ecological governance. Academic research is shifting towards using the term 'governance' over 'management' or 'government' to reflect and denote the intricacies of human socio-ecosystem interaction.

Case studies include fisheries management in Kenya and Mexico, forestry management in British Columbia, agroforestry in Ghana, as well as park and land management in Europe. Each study presents a brief literature review and frequently introduces the same information as covered in the book's first section – albeit with the case study author's own use and interpretation. Brief methods are presented, followed by results and

discussion. However, these are not as clear as would be expected in a journal article and the overall tone is more discursive than instructional. The major interest is seeing how each author chose to use SNA, why and in what capacity rather than the ease of reproducibility of their work.

Some authors are much more theoretically inclined while others prefer to present information more quickly. As such, the reader is likely to find his or her preferred writing style in several case studies. As previously mentioned, the text is very dense at times in content but especially in format. The font is too small and margins over-large (perhaps for note-taking?) I found this detracted substantially from my reading as I could easily lose my place. The relative paucity of diagrams, maps and other illustrative material also contributed to an ease of 'zoning out' while reading, as text was not broken up. Given I am actively interested in the subject matter, I found these decisions – many of which likely did not fall under author control – detracted from the text and its usefulness as a reference for moving SNA into ecological and agro-ecological social analysis.

I also found that some contributing authors did not take their analysis to the next level, explaining how their determined networks could be used as anything more than hypothetical or informational. From a resource management perspective, tracking information flow is a primary use of SNA in ecology in order to establish who to speak with or how to transfer knowledge effectively. Tests of elaborated networks to determine their usefulness in this capacity, or comparison of network structure between successful and unsuccessful ecosystem management cases still seems to be lacking.

The coverage of researcher bias in SNA was spotty, but present. Bias can be significant as networks, whether ascribed or self-identified, are based on how respondents fit into categories determined by the researcher and how the researcher interprets a word. It is important to incorporate multiple dimensions into any analysis and determination of network structure which is inherently difficult and complex to accomplish. How networks can be graphically represented for analysis to provide the most information clearly is not covered in this book.

I recognise that the aim of the authors is not to produce a how-to text, but a reference tool. However, I do lament the lack of a more expanded critical discussion on researcher bias, the efficacy of using SNA in natural resource management and when it is appropriate, applying SNA beyond network elaboration (which is a time-consuming and complex activity in itself) and how SNA information can be graphically represented or analysed for non-academics. This latter topic is important since collaborative action across disciplines and education levels is vital in natural resource management.

I would rate this book as a 'borrow' over 'purchase', since it does provide a good overview of SNA and theory, in addition to learning in what situations and why authors chose to use SNA. The editors do meet their objective of '*using a social relational approach to gain a deeper understanding of the social dimensions of*

natural resources governance' (page 5). Such work is the first step for establishing more research using SNA as a tool within natural resource management and ecological governance.

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