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The Use of Community in Natural Resource Management

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This chapter examines the use of *community* in research papers and articles that address a range of natural resource themes. A review from books of abstracts from previous International Symposia on Society and Resource Management (ISSRM) and the *Society and Natural Resources* (SNR) journal confirms that the use of *community* in natural resource management is complex and widespread. Similar to others who have conducted such assessments (e.g., Jakes & Anderson, 2000), we find that *community* remains an elusive concept. It has been used to frame units and levels of analysis, as both a central and peripheral concept, and as an independent and dependent variable. Moreover, uses and applications of the term *community* have changed over time.

In this chapter we review some of the more critical issues related to the use of *community* in natural resource management. First, we provide an overview of the uses of the term. We then focus on a differentiation between use of the concept as either a unit or level of analysis, examine use of the concept in the context of several key content domains, and identify the implications of the patterns and trends observed in the literature for future community-related work in natural resources.

Overview

Social science approaches to the study of community and related phenomena have always been multi-faceted, with only limited agreement regarding the core elements of the concept (Hillery, 1955). It comes as no surprise, then, that there is considerable diffuseness in the *SNR* articles and ISSRM papers as they incorporate some focus on the community concept, suggest that the term has some innate plasticity, and enable researchers to shape and mold it to their own particular needs and purposes.

This review begins with the first ISSRM in 1986. Eighteen of the presented papers reflected the general nature of community-related work at that particular

time. These papers explored social impacts (Manring, West & Bidol, 1986; Milburn, 1986), policy (Hoogland, 1986), and forest stability (Weeks, 1986) through the use of case study approaches (Fortmann & Starrs, 1986), key informant interviews (Fore, 1986; Hooper & Branch, 1986), and survey data (Blahna, 1986; Jobes, 1986). Most importantly, these papers more or less served as harbingers for material presented at future meetings and or published in *SNR*. Nearly all of this work was characterized by the use of a *systems* or *human ecological* perspective, a pattern that remained in place throughout much of the first decade of ISSRM activity (see Kersey & Machlis, 1986; Muth, 1986; Salazar, 1986).

A similar pattern was observed for the next several symposia. However, with rapidly increasing attendance at ISSRM, many more papers on community appeared, and a greater diversity of subject matter, theoretical perspectives, and frameworks was observed. Despite this growth, the early work on natural resource-based communities, community-based resource management efforts, and case studies, remained a major focus of researchers. And, importantly, while there was a tremendous increase in the number of people presenting papers at the meetings, those involved earliest in community-related research remained active, presenting papers at later meetings as well.

Ten years after the inaugural ISSRM, nearly 50 community-related papers were presented at the 1996 symposium. Many were part of sessions that emphasized place meanings and attachment, tourism-related research (e.g., natural resource tourism, ecotourism, heritage tourism), citizen involvement in natural resource decisions, land use policy, and natural resource issues at the rural-urban interface (e.g., Austin, 1996; Burr, 1996; Mendez & Carroll, 1996; Stedman, 1996; Winter, 1996).

At the 2002 symposium, the number of community papers presented was roughly equivalent to that observed in 1996. However, the diversity of subjects expanded, including several papers that addressed community agency and interaction, collaboration, and participation (in addition to the broad categories present at earlier conferences). These newer subjects reflected a continued broadening of frameworks, including social construction and field-theoretical perspectives (Higgins, 2002; Moore, 2002; Steele & Luloff, 2002). In addition, many papers focused on disaster and risk-related research associated with the occurrence of serious forest fires in the American West. As with earlier proceedings, the level of interest in the work of natural resource scientists on community-related studies was expansive, with papers in a wide range of thematic sessions.

A similar pattern of expansion in both numbers of papers and areas of focus is evident over time in the content of SNR, though increased numbers are attributable in part to expansion from four issues per year to six, then eight, and eventually ten. Published work on community was relatively sparse in the first year of SNR, with articles focusing on communities as the object of study either in a comparative context (Seyfrit & Sadler-Hammer, 1988) or as a case study (Carroll, 1988). Ten years later, the journal published considerably more community-related research. Included were articles on community-based natural resource management (Brosius, Tsing & Zerner, 1998), forest dependency (Pendleton, 1998), and communities as the object of study, including comparative community responses to environmental and resource conditions (Beckley, 1998; Krannich & Smith, 1998; Spies, Murdock & White, 1998), community participation (Thwaites, De Lacy, Li & Liu, 1998), and community impacts (Richards & Womersley, 1998; Steelman & Carmin, 1998). In 2003, nineteen articles with a community context were published in SNR. These included several that focused on community as the context of study (Eser & Luloff, 2003; Field, Voss, Kuczenski, Hammer & Radeloff, 2003; Parisi, Taquino, Grice & Gill, 2003), community participation (Mclean & Straede, 2003; Stem, Lassoie, Lee, Deshler & Schelhas, 2003), natural resource dependence (Allison & McBride, 2003; Smith, Jacob, Jepson & Israel, 2003), and community-based forestry and other such analyses (Gupte, 2003; Schusler, Deceker & Pfeffer, 2003; Taylor, 2003; Virtanen, 2003).

As the foregoing overview reveals, work with a focus on some aspect of community has become increasingly evident over time in both ISSRM papers and SNR articles. However, while significant for its contributions to our understanding of specific issues, this admixture of work has not been terribly efficient at advancing our knowledge. Part of this problem is traceable to confusion between units and levels of analysis.

Units and Levels of Analysis

The review of ISSRM and SNR abstracts revealed that most of the community-related research could be sorted into one of two types of studies: studies *in* community or studies *of* community. Here, what is meant by each type of study is explained and illustrations of how community has been used in both are offered. First, however, it is important to differentiate *level* of analysis from the more vernacular *unit* of analysis, though both are important when framing and conducting community research.

At a minimum, two questions can be asked about any research paper, community-related or otherwise: 1) what is the unit of analysis?, and 2) what is the level of analysis? The former refers to whom or what is being studied and generally refers to an individual, social grouping (e.g., household, organization, community) or material objects (e.g., books, paintings, automobiles) and social interactions (e.g., weddings, divorces, friendship choices). This is contrasted to the level of analysis which refers to where the study is being conducted. All too often, researchers studying community and/or community-related topics ignore the level of analysis, confuse the unit of analysis with the level of analysis, or commit an aggregation fallacy of some form.

Confusion concerning levels of analysis has impeded the development of a coherent body of literature about community. Despite numerous warnings, community researchers continue to employ data that have been collected at and/or aggregated to a real level that differs from their level of interest (Luloff & Greenwood, 1980; Robinson, 1950). Unfortunately, such practices cause confusion in the levels of analysis. While neighborhood-, place-, county- and regional-level investigations are worthy, they become problematic when the findings from them are generalized to the community level (see Beckley, 1998).

In addition, it is important to differentiate between studies *in* community and studies *of* community. Studies in community are distinguished by their use of the community as the setting in which investigators conducted their work. A large number of investigators have examined perceptions, knowledge, attitudes,

experience, behaviors, and behavioral intentions of community residents with respect to environmental and/or natural resource-related issues (e.g., Connelly & Knuth, 2002; Hooper & Branch, 1986; Spies et al., 1998). Often, in these studies, community was the *level* of analysis and the individual was the *unit* of analysis. However, in some studies the level of analysis was the county (Fore, 1986; Simmons & Wall, 1990) or region (Bright, Barro & Burtz, 2002; Colvin, 2002) and in some, the unit of analysis was the family, the household, groups of individuals, or citizen advisory committees (Busenberg, 1998; McDermott, 1994; Weeks, 1986).

The second distinguishable stream of research is labeled studies *of* community. Here, investigators deal explicitly with the relationship between environmental/natural resource and community. Community is not the backdrop for the study. Instead, community is the object of the study (Parisi et al., 2003; Seshan & Luloff, 1996). The community is incorporated as both the *unit* and *level* of analysis in this literature.

Key Content Domains

Even though applications of the concept of community have been highly variable, a review reveals several key content domains that collectively encompass a substantial majority of such applications. One of the overarching themes involves a focus on resource dependent communities. This content area is, in itself, quite heterogeneous. A major area of emphasis involves efforts to document and account for the natural resource, economic, political and social conditions that contribute to and cause variability in resource dependency (e.g., Becker & Harris, 2002; Beckley, 1998; Force & Machlis, 1996).

A second thematic focus involves the consequences of resource dependency for individual and collective well-being, including numerous analyses focusing on dependency-poverty links, employment and economic opportunity, community autonomy and viability, and patterns of social change (e.g., Bailey & Pomeroy, 1996; Machlis & Force, 1994; Nadeau, Shindler & Bouthiller, 1998; Overdest & Green, 1995; Russell & Harris, 2001). With some exception, a majority of these examinations of resource-dependent communities have focused on North American contexts.

A third area of emphasis that is apparent in both ISSRM and *SNR* pertains to community impacts of various types of environmental and natural resource utilization, development and management actions. A major focus within this area of emphasis involves the effects of decline or closure of resource-based economic activities for communities and residents (e.g., Kusel, Kocher, London, Buttolph & Schuster, 2000; Smith et al., 2003; Weeks, 1986). A second focal area involves the effects of resource-based extraction and commodity-oriented activities such as mining, energy and water resource developments (e.g., Corkran, 1996; Cortese, 2003; Kruger, Lee & Zientek, 1990). Studies of social impacts of exposure to or the siting of hazardous and noxious facilities, including radioactive waste disposal, toxic spills and exposure episodes, industrial emissions of toxic chemicals, and other undesirable land use events, represent a third major area of concentration (e.g., Kleiner, Rikoon & Seipel, 2000; Richards & Womersley, 1998; Wulfhorst & Krannich, 1999).

Finally, there have been numerous analyses of the community impacts associated with tourism and recreational visitation, park designation and management, and amenity-based growth and development (e.g., Allen & Grumbling, 1990; Clendenning & Field, 2002; Dawson & Blahna, 1992; Lindberg & Johnson, 1994). Interestingly, this area of emphasis is far more evident in ISSRM papers than in *SNR* articles. Also interesting is that most of the presented and published papers in these community impact areas have been dominated by a focus on North American situations. This suggests either that much of the social impact assessment work focusing on international settings is presented at and published in other venues, or that relatively little such written work is produced internationally.

One of the most prominent areas of emphasis evident in ISSRM and SNR involves studies examining aspects of what can generally be described as *community-based resource management.* This includes examinations of community forestry, community-based fisheries management and community-based wildlife management. Dozens of such manuscripts and articles have appeared in both venues, with major expansion in the number of such pieces evident during the past five years (e.g., Brosius et al., 1998; Krogman & Beckley, 2002; Luloff & Finley, 2000; Taylor, 2003; Zanetell & Knuth, 2003). Unlike the areas examined above, this domain is characterized by a preponderance of analyses focusing on international contexts, particularly portions of southern Asia and Africa. Examination of *community-based resource management* in North American settings has become increasingly evident over time, likely reflecting paradigm shifts in the policies and practices adopted by various natural resource management agencies during the past decade.

Implications

Community remains an omnibus term, used in a variety of manners and purposes. While clear congruencies exist among certain uses, there is limited possibility of deriving mutually exclusive and totally exhaustive categories to adequately summarize the focus of all of these studies. In short, the concept is not a theme around which a coherent and cumulative body of knowledge and application has evolved, although researchers and managers appear to be increasingly cognizant of community-resource linkages. However, approaches used to analyze and understand such linkages remain highly divergent. Variations in theoretical orientations, in the units of analysis examined, and in levels of analysis contribute to a rich, but also complex and at times murky literature base addressing the community-resource interface.

In addition, a great deal of overlap exists across the key content domains reflecting application of the community concept to resource management. This is especially the case for the increasingly popular focus on community-based resource management and similar emphases that examine the ways in which communities are engaged in resource utilization and management decision processes. This includes the variety of public participation activities, community-based collaborative planning strategies, and episodes of community action and agency. These latter categories provide much fertile ground for concretizing the central concept under study. That is, by focusing on the community as both a unit and level of analysis, and including the roles of individuals and organizations in locality-relevant actions, researchers are more likely to identify central characteristics of community vital to natural resource issues.

Conclusion

The evidence clearly indicates an expansion in both the number and scope of analyses applying the concept of community to natural resource management topics over the time since ISSRM and *SNR* were founded. Such applications will likely remain highly prevalent in both ISSRM papers and *SNR* articles in the coming years, for several reasons.

First, expanded implementation of various community-based management processes has generated broadened public expectations regarding the legitimacy of community engagement and agency as a component of resource management decision-making. Once established, such expectations for civic involvement in resource management will not be easily extinguished. As a result, studies of such processes are likely to become increasingly common in future years. Second, there is increased interest in the ways in which natural resource conditions may contribute to or detract from individual and collective well-being, and there is a strong theoretical connection between notions of well-being and the concept of community (see Wilkinson, 1991). Finally, there can be little doubt that one important facet of resource management involves understanding how people living in specific places make use of, develop meanings and attachments to, and are affected by, the conditions of spatially proximate natural environments. Even in the face of global environmental processes and expanding resource use by geographically dispersed populations, the actions and fates of people living in localized communities are inextricably linked to the conditions of surrounding landscapes and resources.

As Wilkinson (1991) observed, community well-being and ecological well-being are closely intertwined. Because there is much about these linkages that remains unexplored and unexplained, there is considerable need for more and better community-oriented research addressing natural resource conditions and natural resource management issues.

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