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"We and us, not I and me": Justice, social capital, and household vulnerability in a Nova Scotia fishery



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ABSTRACT

Marine harvesters face significant livelihood challenges due to the impacts of climate change on marine ecosystems, and due to economic fluctuations that influence their incomes. In this study, we demonstrate vulnerability as a product of the interactions among marine harvesters, government and buyers. We combined Elinor Ostrom's attention to the influence of institutions on resource exploitation, with political ecology's attention to perceptions of agency, and the contribution of justice and equity to measuring the success of institutions. We demonstrate the benefits of this approach by examining the multi-species fishery of Barrington, Nova Scotia. We conducted 31 semi-structured interviews and 113 surveys in the summer of 2012 with buyers, harvesters, and local experts. We used Ostrom's SES framework to pinpoint system elements that were salient to respondents, with attention to household vulnerability outcomes. Based on an analysis of these themes, we outline three processes affecting vulnerability outcomes: 1) Harvesters preferred individual over collective action due to low procedural justice and social cohesion in decision-making, 2) agents with greater political and economic power gained control over fishing access-rights while others became more dependent on lobster, and 3) economic and ecological conditions, combined with increased dependence, incentivized harvesters to catch more lobsters as prices declined. The case suggests that actors sense of control over their resource base and perception of justice in the process of institutional design may be as significant in vulnerability as the exogenous drivers of change that affect livelihood outcomes. We suggest interventions that may improve these interactions among government, harvesters and buyers, and improve the livelihoods in coastal communities.

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Introduction

Processes of global economic and environmental change have exposed fishing households to novel challenges, including market volatility, changing frequency and severity of extreme events, and changing patterns of species abundance and distribution (Brander, 2007; Holland, 2011; Worldfish Centre, 2007). Many vulnerability studies have focused on household attributes leading to vulnerable outcomes (Eakin & Luers, 2006). These studies consider the institutional environment as a structural constraint for households. In this study, we argue that more attention needs to be paid to the interactions through which actors influence the institutional

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http://dx.doi.org/10.1016/j.apgeog.2014.11.005 0143-6228/© 2014 Elsevier Ltd. All rights reserved. environment. We demonstrate the importance of these interactions by examining the case of a multi-species fishery in Southwest Nova Scotia (SWNS).

In the following study, we make two theoretical and methodological contributions. First, we demonstrate vulnerability as a product of three interactions: 1) between marine harvesters¹ and government, 2) between harvesters and buyers, and 3) among harvesters. Second, we combine the social-ecological systems framework (Ostrom, 2007), which highlights the influence of institutions² on resource exploitation, with political ecology's emphasis on the perceptions and agency of key actors, and the contribution of justice and equity to measuring the success of institutions.





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¹ Hereafter referred to as harvesters.

 $^{^{2}\,}$ Defined as formal or informal rules that govern the behavior of individuals or groups.

We examined fishing households in Barrington, SWNS, to understand household vulnerability. We analyzed harvester's perceptions of the institutions and social interactions occurring among households, associations, and Fisheries and Oceans Canada (DFO), a federal management organization. We analyzed social interactions to observe legitimacy and trust among actors. Institutional interactions are the mechanisms that influence the interactions between actors, and between harvesters and their fishing grounds. We then examined the implications of these interactions on household vulnerability and livelihood strategies, and how these livelihood strategies scale-up to produce outcomes for the fishing ports of SWNS.

Structure, agency, and environmental change in fisheries

In this section, we highlight the theoretical contributions of commons research and vulnerability research to the fisheries context. We argue for greater emphasis on interactions, rather than variables and attributes.

While early scholars pointed to over-exploitation in fisheries as a tragedy of the commons (Gordon, 1954; Schaefer, 1957), commons literature showed that people often engage in collective action to manage resources (e.g., Baland & Platteau, 1996; Ostrom, 1990). Ostrom (2007) expanded on this literature by incorporating important variables for natural resource governance into a social-ecological systems (SES) framework. This framework allows scholars to analyze interactions and outcomes by examining the variables that characterize the components of SESs. The SES framework is intended to be used by disciplines to locate their contribution to a body of knowledge, and to complement the knowledge generated in other disciplines. McGinnis and Ostrom (2014) have updated this framework to improve generalizability, and to outline the logical relationships between system components. Basurto, Gelcich, and Ostrom (2013) showed how actors can self-govern fisheries through different pathways and conditions, and recommended a grounded approach to avoid blind spots in analysis. In this study, we follow these recommendations by using the SES framework to highlight important themes, but we allow the relationships between themes to emerge based on interview responses. While we analyze the fishery SES at the community level, we use a political ecology framing to account for cross-scale interactions by situating local interactions within larger-scale political economic, and ecological processes.

The commons and SES approach has often focused on outcomes that improve ecosystems or resource use efficiency (Ostrom, 2005). These approaches have also focused on variables, institutions, and interactions that occur at the "local" scale. Vulnerability scholars, however, have demonstrated the importance of paying attention to characteristics of the political-economic setting, as well as power relations and social justice³ (Downing, Watts, & Bohle, 1996; Eakin, 2005; Kelly & Adger, 2000; McLaughlin & Dietz, 2008; Wisner, 2003). In this study, we explore the complementarities of these two approaches.

The term vulnerability refers to the risk that social, economic, or environmental stressors will lead to adverse outcomes for individuals, households, or social groups (Clark et al., 2000). Humans, however, are not just recipients of the effects of these stressors, they are agents capable of coping with change, or altering their biophysical or political-economic landscape (Adger, 1996). The ability of social groups to shape the landscape to meet their needs or interests depends on their political and economic power. McLaughlin and Dietz (2008) have described these interactions among structure, agency, and the environment as a "socially constructed adaptive landscape" that actors adapt to and shape by legitimizing or delegitimizing specific social structures and boundaries.

Vulnerability is often contrasted with resilience, which refers to the capacity of an SES to persist and adapt to avoid radical system state changes when exposed to disturbances (Adger, 2006; Carpenter, Walker, Anderies, & Abel, 2001). These two bodies of literature share an emphasis on enhancing the ability of an SES to adapt to perturbations (Adger, 2006). In the study of SESs, vulnerability contributes understanding of social dynamics and human agency, while resilience contributes insights into social-ecological feedbacks, critical thresholds, and social-ecological transformation (Miller et al., 2010). While recognizing the complementarity of resilience to understanding SES dynamics, vulnerability is the central theme of our study.

Individuals and households are linked to political-economic structures through their agency, social capital, and decisionmaking procedures. The local-level bonds and extra-local networks that constitute social capital (Adger, 2003) "may be a community's best resource in maintaining a capacity to change collective direction" (Pelling & High, 2005, p. 317). When communities have strong local-level bonds but weak extra-local networks, and when the state is largely coercive with low legitimacy, the state clashes with civil society, exacerbating the vulnerability of communities (Adger, 2003). The legitimacy of the state depends on procedural justice, or the degree to which households and individuals perceive decision-making processes and structures to be fair (Adger, Paavola, Hug, & Mace, 2006; Folger, Rosenfield, & Robinson, 1983). Daigle, Loomis, and Ditton (1996) outlined the criteria for procedural justice in fisheries decisions, and argued that these criteria are necessary to prevent conflicts, and to wisely manage resources. In this study, we focused on perceived injustice, and, to the extent possible, triangulated those perceptions with additional evidence. Nevertheless, both subjective and objective forms of procedural injustice limit human agency by reinforcing a belief that individuals cannot play a role in shaping their governance regimes.

Structure, agency, and the environment interact at different scales, and actors at different levels negotiate access to resources. Strategies that are adaptive at the household level may scale-up to create larger-scale system-level fragilities. For example, in response to market liberalization and environmental change, Eakin and Wehbe (2009) found that farmer's adaptations in Mexico and Argentina, such as changing crop choice, diversification, and land tenure had important implications for the resilience of the regional economy, for the risk of landslides and soil erosion, and for forest biodiversity. Conversely, policies such as fishing effort controls designed to ensure resource sustainability at the regional level can create vulnerable conditions for households who depend on those resources by reducing their access to economic opportunities (Cheung & Sumaila, 2008). The management of an SES is effective according to the degree to which it applies rules that are scaled to match problems (Cash et al., 2006), and uses incentive structures that promote stewardship (Eakin & Wehbe, 2009). Chen, López-Carr, and Walker (2014) demonstrate that vulnerability analysis could play a role as a policy tool for matching rules to problems, and for mitigating current and future impacts of economic and ecological change on vulnerable harvesters.

Cases of fisheries governance illustrate the interactions among structure, agency and the environment across scales. Neoliberal reforms at multiple levels have exposed fishing communities to

³ Defined as an equitable distribution of benefits and burdens, as well as the social processes, institutions, and the abilities of humans to develop their own capacities (see Adger et al., 2006; Honneth, 1996; Nussbaum, 2001; Schlosberg, 2009).

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