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Biodiversity Conservation and Social Science Underpinnings in the Cordillera Highlands of Northern Philippines

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ABSTRACT

This article conducts a literature review and synthesis of social science research on biodiversity in the Cordillera of Northern Philippines. The area hosts key biodiversity sites that need protection and conservation but there is little understanding of the socio-cultural, economic and political dynamics that cause the loss of biodiversity and effective conservation. The review showed unequal distribution of social-science among the different sites in the Cordillera with concentration in urban areas. The reviewed materials showed a wide scope of topics, indicating that the social dimension of biodiversity conservation is complex and multidimensional. For social science research to better inform decision-making in biodiversity conservation, social scientists need to be aggressive and openly engaged with practitioners and local policy makers so that relevant research findings could penetrate biodiversity management practice. Partnership among universities and productive research groups could address the disproportionate distribution of research efforts across sites.

KEYWORDS

Biodiversity, Cordillera Highlands, Indigenous Knowledge, Social Science Research, Systems and Practices

1. INTRODUCTION

Acknowledgment of the critical importance of the social sciences to the global conservation agenda is now growing. It seems that everyone working in conservation recognizes that natural science alone is not adequate in solving conservation problems (Mascia et al., 2003; Chan et al., 2007; Schultz, 2011; Kareiva & Marvier, 2012; Hicks et al., 2016). Sandbrook et al. (2013) argue that "… the natural science methods of conservation biology are insufficient to find solutions to complex conservation problems that have social dimensions." De Snoo et al. (2013) suggest that "close involvement of social researchers with their expertise, theories and methods, into conservation biology is a prerequisite for progress in the field."

Successful conservation needs to be informed by social science because it is closely linked to socio-economic processes and human behavior. Kareiva and Marvier (2012) defined that conservation science is characterized by a "tight coupling of social and natural systems". Biodiversity conservation is not solely contingent on ecological knowledge, but should also incorporate human behavior and the

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resulting social processes which eventually influence the status of biodiversity (Ban et al., 2013; Fox et al., 2006). This requires recognition and understanding of the value of research that uses conceptual and theoretical underpinnings of social sciences, such as sociology, economics, human geography, social policy, social psychology, political sciences, public communication and management to investigate human behavior and associated social processes (Bryman and Teevan, 2005). Limited knowledge about ecosystems' interactions with these processes will undermine conservation efforts. Therefore, it is vital for conservation professionals to understand the factors shaping human-environment interactions, particularly human choices concerning the use or conservation of natural resources (Mascia et al., 2003). The social sciences can provide unique and important contributions to society's understanding of the relationships between humans and nature and to improving conservation practice and outcomes (Bennet et al., 2016).

The Cordillera highlands in Northern Philippines harbors several key biodiversity areas (terrestrial and aquatic areas defined by the presence of globally-threatened or distribution-restricted vertebrate species) that need protection and conservation (Ong et al., 2002; Ambal et al., 2012). New species are being discovered, providing clear indication that more intensive studies need to be made in both terrestrial and aquatic systems in this area. However, Ganapin (2002) claimed that biodiversity research for local development, particularly those that are interdisciplinary and multi-stakeholder, is relatively new but taking-off in the Philippines. Many researchers in the field of biodiversity have pointed out that "we know very little of what we pretend to preserve". This theme, however, has referred to biological knowledge such as the lack of a complete inventory of flora and fauna, and, at a higher level, the lack of a good understanding of their ecological relationships. Biodiversity research, therefore, has so far been mostly on the biological side, resulting in conservation policy that protects species, with the more enlightened ones directed at protecting ecosystems. Recently, however, there has been a realization that this "knowing very little" refers not just to the biology of it but more importantly to the lack of a good understanding of the socio-cultural, economic, and political dynamics that cause loss of biodiversity on one hand, and its effective conservation on the other.

The complexity and scope of biodiversity research need not prevent us from starting somewhere in recognizing the social dimension of biodiversity conservation. As a first step, this paper aims to conduct a literature review and synthesis of biodiversity researches done in the Cordillera. Policy implications are identified to further maximize the contributions made by the social sciences research to biodiversity conservation in the area.

2. METHODOLOGY

This paper employs a literature study (Atner and Siebert 2006) to review available empirical and methodological approaches from a range of social science disciplines, including economics, sociology, human geography, politics, planning, anthropology and rural studies to show the contribution of social science research to biodiversity and ecosystem management in the Cordillera highlands in Northern Luzon. A mixed-mode social science research methodology (qualitative and quantitative) was applied allowing for a broader perspective of gathering and analyzing of the data.

Data were collected through desk research and field work. An exploratory search on Web of Science was conducted to identify relevant ecology and conservation journals publishing social science research on biodiversity and related topics in the Cordillera. Search criteria used were "biodiversity conservation, ecosystem management, and Cordillera, Philippines". The journal search generated a significant volume of material, but these were mostly national in scope and only a handful was situated in the Cordillera of Northern Luzon.

The internet search was complemented by visits to the libraries of institutions categorized as, (1) outside of the Cordillera region but are most likely to be gatekeepers of materials needed such as University of the Philippines Diliman, University of the Philippines Los Banos, and the Department of Environment and Natural Resources (DENR); and (2) inside the Cordillera region such as Abra

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