Moving from reactive to proactive development planning to conserve Indigenous community and biodiversity values

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ABSTRACT

There is increased awareness of the need to balance multiple societal values in land use and development planning. Best practice has promoted the use of landscape-level conservation planning and application of the 'mitigation hierarchy', which focuses on avoiding, minimizing or compensating for impacts of development projects. However, environmental impact assessments (EIA) typically focus in a reactive way on single project footprints with an emphasis on environmental values and specifically biodiversity. This separation may miss opportunities to jointly plan for and manage impacts to both environmental and social values. Integrated approaches may have particular benefit in northern Australia, where Indigenous people have native title to as much as 60% of the land area and cultural values are closely linked with natural values. Here, we present a novel framework for integrating biodiversity and cultural values to facilitate use in EIA processes, using the Nyikina Mangala Native Title Determination Area in the Kimberley, Western Australia, as a case study. We demonstrate 1) how social and cultural values can be organized and analyzed spatially to support mitigation planning, 2) how social, cultural, and biodiversity values may reinforce each other to deliver better conservation outcomes and minimize conflict, and 3) how this information, in the hands of Indigenous communities, provides capacity to proactively assess development proposals and negotiate mitigation measures to conserve social, cultural, and biodiversity values following the mitigation hierarchy. Based on values defined through a Healthy Country Planning process, we developed spatial datasets to represent cultural/heritage sites, freshwater features, common native animals and plants represented by biophysical habitat types, and legally-protected threatened and migratory species represented by potential habitat models. Both cultural/heritage sites and threatened species habitat show a strong thematic and spatial link with freshwater features, particularly the Fitzroy River wetlands. We outline some of the challenges and opportunities of this process and its implications for the Northern Australia development agenda.

1. Introduction

Large-scale development projects profoundly transform environments, communities, cultures and economies, and often generate social conflict (Hilson, 2002; Bridge, 2004; Hanna and Vanclay, 2013; Franks et al., 2014). These types of development will continue to expand as global population and consumption increase (Oakleaf et al., 2015). Environmental licensing processes, such as Environmental Impact Assessment (EIA), play a critical role in limiting impacts from development projects to both the environment and the affected communities. In most countries, developers are required to get an environmental license before development activities can begin, and EIA has been legally adopted in almost all countries in the world (Morgan, 2012; Villarroya et al., 2014). The scientific community has responded to this requirement with decades of research establishing the mitigation hierarchy and best practices for mitigation of impacts to biodiversity (e.g.

Kiesecker et al., 2010; Maron et al., 2015; Tallis et al., 2015), as well as conventions and systems for maintaining and sharing biodiversity information (e.g., Dunn and Weston, 2008; Lewis et al., 2008). When applied in the earliest stages of the decision-making process, EIAs can become important project planning instruments, providing information describing the consequences of specific development activities in a way that can inform approval decisions and design mitigation measures.

Since EIA is the most developed policy instrument, backed by a legal framework in many countries, it is increasingly also used to assess the social and economic impacts of planned interventions. Values considered by the EIA processes include primarily environmental values, with a focus on biodiversity. However, there is growing recognition that impact assessments and mitigation requirements should include social and cultural values with systematic frameworks and standards (Arce-Gomez et al., 2015; Vanclay et al., 2015; Partal and Dunphy, 2016). There are already International standards that call for the conservation of cultural and social values, including the UN Declaration on the Rights of Indigenous Peoples, UN Sustainable Development Goals, and the International Finance Corporation Performance Standards (IFC, 2012), andrequire assessment of risks and impacts to cultural values. Additionally, as recognized by the Millennium Ecosystem Assessment (2005), while society's demand for cultural services has continued to grow, the capability of ecosystems to provide cultural benefits has been significantly diminished in the past century. Ecosystem services are generally classified by type as provisioning, regulating, habitat/supporting, and cultural (Millennium Ecosystem Assessment, 2005; TEEB, 2011). Cultural ecosystem services (CES), defined as the non-material benefits of ecosystems and human-environment interactions, are often missing from management policy (Chan et al., 2012, 2016; Pascua et al., 2017).

In recognition of the rights of people to maintain their social and cultural identity, the concept of Free, Prior and Informed Consent (FPIC) has been established as a specific right of Indigenous peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples, the United Nations Universal Declaration of Human Rights, the International Labour Organization Convention 169 (Indigenous and Tribal Peoples Convention, 1989), and the Convention on Biological Diversity. FPIC is intended to enable communities to give or withhold consent to a project that may affect them or their territories and to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. A key component of the FPIC framework is that consent is sought sufficiently in advance of any authorization or commencement of development operations (Hanna and Vanclay, 2013; Vanclay et al., 2015). But like EIA, FPIC is typically a reactive process not initiated until a government entity or company informs an Indigenous community of their intention to develop within their territory. As a result, the typical project review process does not allow adequate assessment of impacts to social and cultural values because of the time, data, and technical capacity required.

Efforts to conserve biodiversity globally have developed best practices and data systems that facilitate effective impact assessment, such as criteria for threatened species designations based on rarity and vulnerability (Ricketts et al., 2005; Langhammer et al., 2007; IUCN, 2017). These have been widely adopted in EIA law and policy (Villarroya et al., 2014) and are recognized by developers and lenders (IFC, 2012), with resulting benefits for biodiversity conservation. Similar constructs to organize information to inform mitigation of impacts to social and cultural values have not been universally adopted. In many landscapes, biodiversity and cultural/social values are intricately related (Altman, 1987; Asafu-Adjaye, 1996; Garnett et al., 2009; Hill et al., 2013; Moorcroft et al., 2012). The decision-making process will benefit from a more integrated approach, particularly for developments impacting Indigenous communities where cultural values are often of great importance.

Impact assessment that considers environmental, social and economic values requires an integrating framework. In many cases, environmental impact assessment and social impact assessment have operated in separate realms. To date, few unified conceptual frameworks exist to guide the standardized integration of biodiversity and social/cultural values into environmental impact assessments or development proposals, despite Indigenous people owning or having legal title to a large portion of the world's lands and water (Oxfam, 2016; Wily et al., 2017). Geneletti (2015) proposed a conceptual framework for integrating ecosystem services into strategic environmental assessments. Tallis et al. (2015) proposed a framework for integrated biodiversity and ecosystem services mitigation. Pascua et al. (2017) developed and demonstrated a framework for eliciting place-based CES. Principles and guidance exists for how to include social and cultural values in EIAs (Vanclay, 2003; Vanclay et al., 2015; Arce-Gomez et al., 2015) and in the specific context of ecosystem services (Karrasch, 2016), but no systematic approach or analytical precedent for integrating cultural values with biodiversity has been proposed.

Therefore, we see a unique opportunity to advance mitigation for both biodiversity and cultural values jointly, to evaluate and demonstrate: 1) how social and cultural values can be organized and analyzed spatially to support proactive mitigation planning and management decisions, and how this can enable FPIC for Indigenous communities; and 2) how cultural/social and biodiversity values may reinforce each other to deliver effective conservation outcomes that address cumulative impacts at landscape-scales and that better account for social impacts. Here, we outline a method for incorporating biodiversity and cultural/social values into a development planning process, using a case study on Indigenous land in northern Australia. The result is a framework for mapping community-defined social, cultural, and biodiversity values to support EIA by enabling proactive impact analysis and informed negotiation of development proposals. The framework provides data and capacity to an Indigenous community to proactively assess development proposals and negotiate mitigation measures to avoid, minimize, and offset impacts following the mitigation hierarchy.

This framework is novel in two ways. First, it integrates spatial data representing social, cultural, and biodiversity values to enable impact analysis. Second, it provides this information directly to the Nyikina Mangala community and their aboriginal corporation, i.e. the Registered Native Title Body Corporate (RNTBC). As such, we expect that it will improve EIA processes by enabling proactive, informed assessment and negotiation of development plans on their native title lands. We discuss strengths and challenges to the process and applicability to other regions.

1.1. Background

Indigenous land management in Australia, often called 'Caring for Country', includes a wide range of environmental, natural resource and cultural heritage management activities undertaken by Indigenous individuals, families, groups and organizations. Resource use over more than 60,000 years occurred in accordance to seasonal and geographic patterns of the land, based on holistic relationships between traditional Indigenous people and their customary land estates—or 'Country'. This has resulted in close linkages between cultural heritage and environment values (Altman, 1987; Asafu-Adjaye, 1996; Hill et al., 2013).

Traditional Owners hold native title rights to approximately 32% of Australia's total land area, and as much as 60% of northern Australia, through Native Title Determinations as of March 2018 (National Native Title Tribunal, 2018). Native title is the recognition in Australian law that some Indigenous people continue to hold rights to their land and waters that are based on their traditional laws and customs. The *Native Title Act 1993* (NTA) provides a system for the recognition and protection of native title rights and for its co-existence with other land-management and land-use interests. The Australian Indigenous estate has high national environmental significance and includes some of Australia's highest conservation priority lands and a diverse range of