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Institutionalizing environmental valuation into policy: Lessons from 7 Indonesian agencies

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ABSTRACT

Monetary valuation of the environment is increasingly embedded in policy. Despite broad claims that valuation is policy-relevant, there is widespread frustration that it has not widely improved environmental outcomes, that it obscures many other types of values, and presents unintended consequences. We argue that this is, in part, because of a tendency to overlook the mechanics of how valuation tools and data are embedded into the institutions (regulations, norms, rules, schemes) that mediate decision-making. Discussions of how valuation engages with policy are often anecdotal and rarely systematic. This manuscript responds with a structured analysis of valuation within 7 Indonesian government institutions. By analyzing the legislative provisions that deal with valuation within each agency, we explore the challenges of institutionalizing valuation into policy. We consider the difficulties of: defining what is (and isn't) valuable, specifying methods, and identifying policy objectives. We found broad gaps and inconsistencies in the aims, definitions, methods, and treatment of non-market goods and services. We identify a need for broadened thinking about the role of valuation data within everyday environmental governance, including how it is codified and operationalized. To this end, we provide a framework of the "cascade" relationship between environmental management, ecosystem goods and services, human wellbeing, and their relationship to environmental governance, which uncovers the mechanics of how valuation can inform decision-making via different institutional arrangements. We call for a critical, yet also more pragmatic and field-based interrogation, of how and why valuation is conducted by decision-makers, in order to improve our understanding of its social and environmental implications.

1. Introduction

There are growing efforts to better account for ecosystem goods and services in decision-making (Costanza et al., 1997; Ricketts et al., 2004; Bateman et al., 2015). While there are many ways of thinking about values and environmental benefits (Diaz et al., 2015; Chan et al., 2016), these efforts, while covering a wide range of goods and services, often emphasize monetary valuation, and incorporate different accounting perspectives that include private, global, national and subnational goods (Pearce et al., 1989; Costanza and Daly, 1992; Guerry et al., 2015). Such environmental valuation translates environmental benefits into the standard monetary language in which decisions and trade-offs are commonly understood (TEEB, 2010; Costanza et al., 2014).

Valuation is embedded across environmental policies and platforms, often in the form of natural capital valuation, trade-off analyses, green accounting and payment for ecosystem service schemes (overviews in Gómez-Baggethun and Pérez-Ruiz, 2011; Braat and de Groot, 2012). Contemporary efforts include multilateral initiatives, such as The Millennium Ecosystem Assessment (MEA, 2005), The Economics of Ecosystems and Biodiversity (TEEB, 2010), the World Bank's Wealth Accounting and the Valuation of Ecosystem Services partnership (WAVES, 2015) and policies for Reducing Emissions from Deforestation and Forest Degradation (REDD+). To date, at least 69 countries have committed to accounting their natural capital stocks under WAVES, and in the United States, this is now a mandatory part

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of federal planning and decision-making (USA, 2015). Private sector efforts are also mainstreaming valuation, including through the Natural Capital Declaration (2012) and World Business Council for Sustainable Development (WBCSD, 2011). Valuation tools are further expanding with the adoption of "green economy" policies in many places, including tropical developing countries, which seek to promote growth in ways that also enable environmental protection and emissions reductions (Ferraro et al., 2012; Graat and de Groot, 2012; e.g., Sills et al., 2014; WAVES, 2015; UNCEP and UNORCID 2015).

Considerable research has conceptualized, quantified, modeled and valued ecosystem goods and services (e.g., Hussai and Gundimeda, 2010; TEEB, 2010; Costanza et al., 2014; Naeem et al., 2015), and parallel efforts have sought to facilitate the use of valuation data in decision-making (e.g., Rosenthal et al., 2014; Waite et al., 2014; InVest, www.naturalcapitalproject.org/INVEST; ARIES, www.airesonlines.org). A concurrent critical literature has interrogated the relative merits and limitations of valuation (e.g., Garmendia and Pascual, 2013; Adams, 2014; Spash, 2015; Scharks and Masuda, 2016), and the consequences of environmental commodification (e.g., McAfee 1999, 2015; Salzman and Ruhl, 2000; McCauley, 2006; Gómez-Baggethun and Pérez-Ruiz, 2011; Robertson and Wainwright, 2015).

There is, however, little structured analysis on the state of monetary valuation within everyday environmental governance processes. Despite broad claims that valuation data is policy-relevant, there is little evidence that it has been mainstreamed into environmental decision-making (see Kushner et al., 2012; Laurans et al., 2014; Waite et al., 2014; Laurans and Mermet, 2014). This reflects disconnects between both academe and practice (cf. Laurans et al., 2014) and between environmental economics and political ecology (cf. Kallis et al., 2013; Kull et al., 2015). These disconnects run the risk of "tragedy of well-intentioned valuation", in which valuation technologies ultimately compromise desired outcomes (Gómez-Baggethun and Pérez-Ruiz, 2011; e.g., biodiversity offsets, Maron et al., 2015 and green infrastructure, Garmendia et al., 2016). This has triggered growing demand for valuation to demonstrate more tangible outcomes (e.g., Pearce et al., 1989; Daily et al., 2009; Muradian and Rival 2012; Guerry et al., 2015; Silverton 2015), as well as for greater critical reflection of valuation tools (Gómez-Baggethun and Pérez-Ruiz, 2011; Garmendia and Pascual, 2013).

We contend that frustration with monetary valuation tools emerges, in part, because of a tendency to overlook the mechanics of how valuation is embedded into the institutions that mediate environmental management. Institutions include the "conventions, norms and legal rules of a society [that] provide expectations, stability and meaning essential to human existence and coordination, [and which] regularize life, support values and protect and produce interests" (Vatn, 2006). This manuscript specifically considers government institutions interested in forests, and highlights legislation as one window, of many, for understanding how valuation is used by decision-makers. We apply this to Indonesia, a country at the center of discussions on forest governance, and consider 7 national agencies engaged in valuation. By taking stock of the legislation which refers to monetary valuation in these agencies, this manuscript identifies: the stated objectives for conducting valuation, the ecosystem goods and services valued, and the economic methods employed. It highlights key challenges to institutionalizing valuation into policy.

2. Monetary valuation and environmental governance

The relationships between environmental management, ecosystem goods and services, and human wellbeing are often envisioned as a "cascade" (de Groot et al., 2010; Fig. 1), in which there are multiple interplays between ecosystem-derived benefits

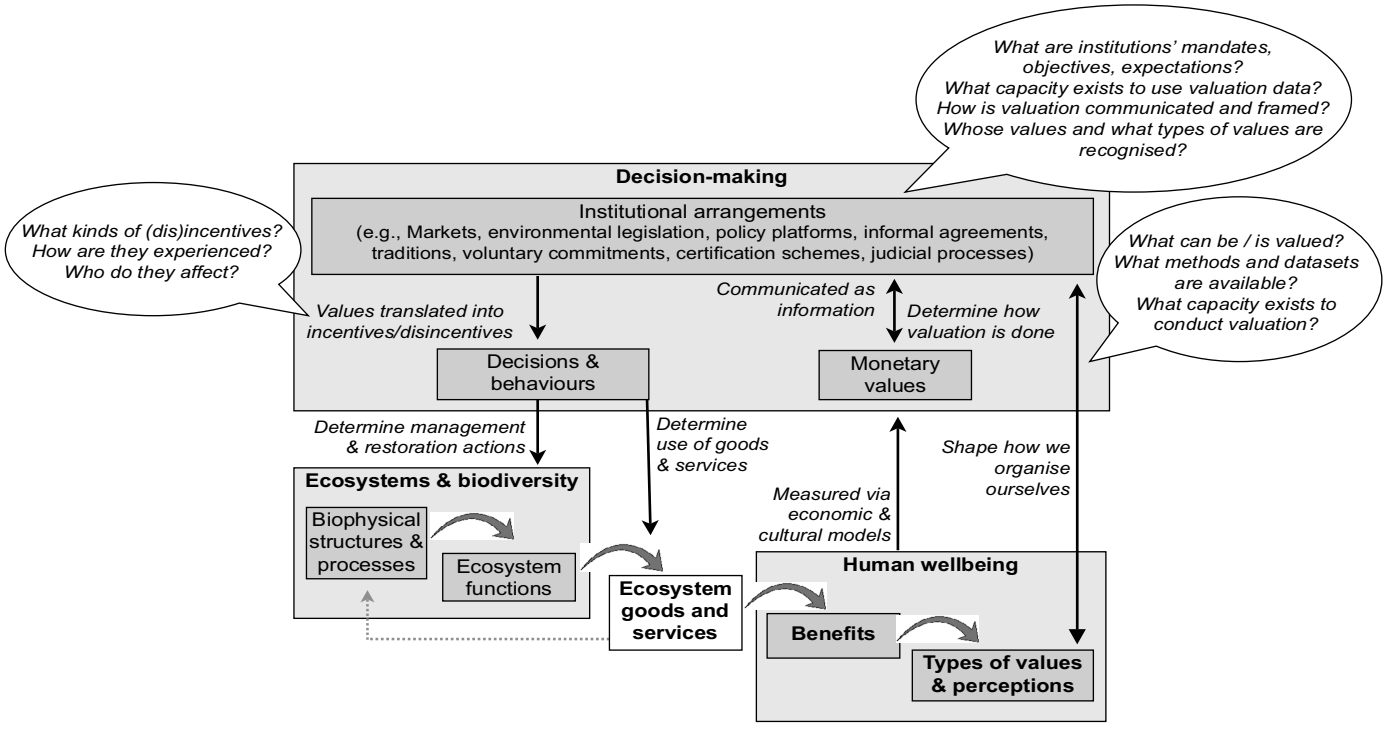

Fig. 1. Framework showing the relationship between the "cascade" of environmental management, ecosystem goods and services, human wellbeing, and their relationship to environmental governance, highlighting the mechanics of how environmental valuation data can inform decision-making via different institutional arrangements. Italics indicate key questions to consider when institutionalizing valuation into decision-making. Based on the TEEB model (de Groot et al., 2010) and the model of ecosystem services and decision-making (Daily et al., 2009).