Ecosystem Services 14 (2015) 56–66

Contents lists available at ScienceDirect

Ecosystem Services

journal homepage: www.elsevier.com/locate/ecoser

The social distribution of provisioning forest ecosystem services: Evidence and insights from Odisha, India

Roan P. Lakerveld [a,b,*], S. Lele [b], T.A. Crane [c,1], K.P.J. Fortuin [a], O. Springate-Baginski [d]

[a] Environmental Systems Analysis Group, Wageningen University, Wageningen, The Netherlands
[b] Centre for Environment and Development, Ashoka Trust for Research in Ecology and the Environment, Bangalore, India
[c] Livestock Systems and the Environment, International Livestock Research Institute, Nairobi, Kenya
[d] School of International Development, University of East Anglia, Norwich, UK

ARTICLE INFO

Article history:
Received 15 October 2014
Accepted 4 April 2015
Available online 24 May 2015

Keywords:
Ecosystem services
Human well-being
Social distribution
Access
Political ecology
Cultural identity

ABSTRACT

Ecosystem services research has highlighted the importance of ecosystems for human well-being. Most of the research, however, focuses only on aggregate human well-being and disregards distributional and equity issues associated with ecosystem services. We review approaches from institutional economics, political ecology and the social sciences in order to develop an analytical framework to understand the distribution of benefits from ecosystems across different socio-cultural groups and the underlying social processes involved. We then present a case study of the distribution of provisioning ecosystem services in a forest-fringe village in Odisha, India. Our analysis shows the unequal distribution of ecosystem services and complex social processes that determine these. We identify the determining factors and processes to include: differential resource-specific needs, different cultural identities, differentiated social status and bargaining power, exclusionary and inclusionary social practices, differential access. Our analysis proves therefore that aggregation of forest ecosystem benefits obscures crucially important patterns of distribution, and the underlying social processes that determine these. This also demonstrates the necessity of applying social science frameworks in such analyses. Our study also shows that most ecosystem services are co-produced through both ecosystem processes and social actions, and so their assessment cannot be separated from the social context in which they are embedded. In conclusion we recommend that ecosystem services research engages more with process-oriented, context-specific and integrated approaches, based on a recognition of the complexity of social-ecological realities.

1. Introduction

In the last decade, 'ecosystem services' has become a dominant concept for researchers, global development agents, and policy makers in thinking about the relationship between human societies and ecosystems (Gómez-Baggethun et al., 2010; Lele et al., 2013; Norgaard, 2010). The Millennium Ecosystem Assessment (hereafter MA) (MA, 2005) defined ecosystem services as "the benefits people obtain from ecosystems" and classified the multiple forms of these services, both direct and indirect, essentially arguing that conservation of ecosystems can simultaneously serve development goals. The MA, followed by The Economics of Ecosystems and Biodiversity report (TEEB, 2008), triggered a large body of ecological-economic research that has focused on identification, quantification, mapping and aggregate economic valuation of ecosystem services (Fisher et al., 2009; Nicholson et al., 2009; Vihervaara et al., 2010).

Although the concept of ecosystem services has helped emphasize the role of ecosystems as important contributors to human well-being, the vast majority of studies only consider aggregate well-being, without questioning how these contributions are socially distributed[2]. This follows, perhaps unconsciously, from the normative bias in the MA conceptual framework, wherein the

Abbreviations: NTFPs, non-timber forest products; CFM, community forest management; ST, scheduled tribe; SC, scheduled caste; Hhs, households; PES, payments for ecosystem services; REDD, reducing emissions from deforestation and forest degradation

* Corresponding author at: Wageningen University, PO Box 47, 6700 AA Wageningen, The Netherlands. Tel.: +31 317 484033.
E-mail address: roanlakerveld@gmail.com (R.P. Lakerveld).

[1] Formerly part of Knowledge, Technology and Innovation, Wageningen University, Wageningen, The Netherlands.

[2] Some notable exceptions are van Beukering et al. (2003), and Lele and Srinivasan (2013).

http://dx.doi.org/10.1016/j.ecoser.2015.04.001

ecosystem is the primary consideration, and human well-being is derived from ecosystem services in a somewhat unilinear manner (see Lele, 2013). Contributions to well-being are specified as 'security', 'social cohesion', and 'freedom' (MA, 2005), but concepts which would differentiate the distribution of benefits (and costs); like 'equity' or 'fairness' are not mentioned. A further limitation of the ecosystem services literature is that social analysis is limited to estimating economic value or marginal change in it. The underlying assumption is that ecosystems degrade because policy-makers do not know their 'true' contribution to human well-being. This is a major oversimplification, but it has nevertheless prevailed in ecological-economic research circles (see Norgaard, 2010). The findings generated by such research find easy entry into neoliberal policy processes that are already heavily biased against distributional questions. We argue that ecosystem services research will be unable to fully achieve even the objective of combining ecosystem conservation and development if equity issues are ignored. The link between ecosystem services and well-being is poorly conceptualised for at least two further reasons. Firstly, ecosystem services are rarely the result of nature simply giving them to society. Instead, most ecosystem benefits are co-produced through social processes involving labour and capital interacting with ecosystems, mediated through institutions like property rights. (Lele, 2009; Lele et al., 2013). Secondly, procedural and distributional equity are important autonomous aspects of well-being. Therefore, whether one's goal is to conserve ecosystems, to enhance human well-being, or to alleviate poverty, an understanding of the relevant social processes is essential. With this paper we put equity and social justice on the agenda of ecosystem services research as essential aspects of human well-being, by showing how access to ecosystems and the ability to derive value from them is shaped by various social factors.

As development sector actors have attempted to link their agendas such as poverty alleviation and inclusive growth (implicitly recognizing issues of equity and social justice) to the concept of ecosystem services, the normative and analytical lacunae discussed above have become increasingly obvious (Lele, 2013). As Daw et al. (2011) point out, "By definition, aggregate measures of ES [ecosystem services] flows are poor indicators […] in the same way that national aggregate indices of wealth […] hide wide variations in the wealth and fortunes of the poorest members of society". They argue that ecosystem services research needs targeted disaggregation approaches that "identify appropriate groups for disaggregation by examining access mechanisms for specific ES and livelihood profiles, perhaps using grounded ethno-ecological research" (ibid.). Similarly, Fisher et al. (2013) present an analytical framework focused on "social differentiation and its implications for access to ecosystem services: the social 'filter' regulating the contribution of ecosystem services to wellbeing". However, these authors present little primary empirical evidence to substantiate their contentions. We believe that if ecosystem services research is to move beyond these oversimplifications and encompass the distributional dimension currently absent from the operational definition of human well-being, it must begin to scrutinize the dialectical processes between ecosystems and well-being. This paper is an attempt to exemplify such an approach.

In this paper, we take the normative position that the concepts of development and human well-being by definition include paying attention to the distributive dimension (Mitlin and Hickey, 2009) and we seek to characterise the nature of ecosystem service flows through this lens. In addition, we demonstrate that the social processes that shape the distribution of ecosystem services can be very complex and require drawing upon multiple explanatory models from the social sciences. As a means of theory testing (proof of principle) and a base for theoretical generalization, we present an in-depth case study of the social distribution of benefits from the use of forest ecosystems in a community-managed forest in Odisha state of India. We use this case study approach to (1) describe the distribution of three provisioning ecosystem services (goat grazing benefits, bamboo benefits, and benefits pertaining to the three most widely used non-timber forest products (NTFPs)) across socio-cultural groups (including class, caste, gender), and (2) explain the observed distribution of ecosystem services in terms of the underlying social processes.

In this paper, we first summarise the main theoretical approaches in social sciences used to explaining the distribution of benefits from natural resources. We then present the case study, describing the study area and context and then presenting the distribution of benefits from three provisioning ecosystem services derived by households belonging to various social groups. Subsequently, we provide a detailed qualitative explanation of the factors shaping this distribution, and finish by discussing the theoretical and methodological implications of these findings.

2. Explaining social distribution of ecosystem services: An overview of relevant theories

The social science literature features several ways of considering and explaining the social distribution of benefits from natural resources (natural resources ranging from mineral resources to (NTFPs). Economists studying common property resources in developing countries have a long tradition of examining the comparative distribution of benefits and costs from such resources, in what forms and why. Pioneering studies of the commons for instance (e.g. Jodha, 1986; Nadkarni et al., 1989) were sensitive to institutional arrangements and outcomes, although later work (e.g. Adhikari, 2005; Coulibaly-Lingani et al., 2009; Narain et al., 2008) has tended to focus more on the role played by private asset ownership in influencing what benefits individuals can derive from the commons[3].

Such assessments typically study existing distributions of resources and their relation to (common property) institutions, but do not research underlying processes of how these institutions of natural resource use emerge and are under continuous change as a result of political processes (Mosse, 1997), nor the strategies that different actors take to negotiate such institutions (Milgroom et al., 2014). Also, this literature generally assumes that if actors have the preference for certain resources, little prevents them from accessing them.

Economic geographers, among others, have pointed to the role of spatial and demographic factors in the social distribution of natural resource benefits. Specifically, they have highlighted the bio-geographical context (e.g. soil condition, topography, hydrology and distribution patterns of useful species) and the location of users in relation to the natural resource and to markets and administrative centres. These affect, for example, the effort required per unit of resource harvested (Gallup et al., 1999), thereby bringing into play demographic factors such as household size.

Some distributional differences, such as choice of species harvested or method of resource management, affecting nutritional and economic outcomes, have been explained by ecological anthropologists in terms cultural preferences, knowledge and ethnic identity (Fa et al., 2002; Maikhuri and Ramakrishnan, 1991). Here the focus is on differences in cultural preferences between social groups, not imposed structural inequity.

In contrast to these individualistic, geographical or cultural explanations of resource use distribution, political ecology and political

[3] The literature on the institutional aspects of common property resources has typically focused more on the sustainability of institutions rather than their distributional outcomes (e.g. Agrawal, 2001).