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A "missing" use for ecosystem services concepts
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The Proceedings' 100th Anniversary special feature on natural capital and ecosystem services highlighted a range of opportunities and challenges to operationalizing these concepts to strengthen environmental governance (1). Yet, it largely overlooked the role that these concepts play in informing courtroom liability suits for environmental damages. Liability provisions are based on the "polluter pays" principle, and hold perpetrators financially responsible for environmental damages. They concern damage or reparation costs that do not appear in company balance sheets (hence neither in macro-economic accounts), unless they are claimed by the potential creditors through court cases, or unless there are state regulations that internalize environmental damages. We believe this omission reflects an important gap in mainstream, contemporary thinking about the role of ecosystem services and natural capital accounting.

Service quantification and valuation are increasingly associated with efforts to implement payments for ecosystem services schemes, raise awareness about environmental benefits, and enable trade-off analysis and priority setting for improved decision-making. The importance of service quantification and valuation to measuring damages for legal liability suits is much less frequently discussed. It remains largely absent from leading ecosystem service initiatives such as the Millennium Ecosystem Assessment, World Bank's Wealth Accounting and the Valuation of Ecosystem Services (WAVES) Programme, and The Economics of Ecosystems and Biodiversity.

Liability for environmental harm serves both important deterrent and corrective justice roles: it increases the financial and non-financial burdens of rule-breaking in ways that can disincentivize future environmental harm, while also compensating victims and securing resources for environmental restoration (2,3). Such liability cases exemplify how natural capital concepts can be leveraged to both improve the environment and address environmental justice concerns (4,5).

In addition to the many topics featured by the *PNAS* Special Feature, the increased, thoughtful use of ecosystem service valuation to inform environmental suits should also be highlighted as a promising, under-utilized opportunity to effect "large-scale transformative change" (1, Table 1), by holding responsible parties more accountable for their actions, and by placing environmental justice at the center of decision-making.
References: