



What's law got to do with it? Why environmental justice is essential to ecosystem service valuation



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ABSTRACT

The purpose of this paper is to show that bringing together legal science and other sciences in integrated valuation of ecosystem services can contribute for environmental justice and ensure fair and acceptable answers to complex real life questions. Legal science provides the teleological framework necessary to prevent ethical deadlocks.

To this end, different forms of environmental justice are addressed. Distributive justice, commutative justice, retributive justice, restorative justice and procedural justice are five types of environmental justice, the content of which is explained using illustrative examples of environmental “injustices”.

Next, these justice forms are applied to fourteen *wicked* legal questions, covering both public and private law, both international and national law, is presented. The questions demonstrate how Integrated Ecosystem Services valuation can be used to address societal challenges related to humanitarian protection, State responsibility, ecological damage, access to natural resources, use of economic instruments for environmental protection, effective environmental sanctioning, access to information, etc.

This paper confirms the potential uses of integrated valuation of ecosystem services in the pursuit of social and environmental goals when legal science and other natural and social sciences are brought together to operationalize ecosystem services.

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1. Introduction

Integrated valuation aims at consistently combining a diversity of value systems, valuers and valuation methods in resource use decisions. Law articulates a broad range of values associated to ecosystems and their services, especially values which are hardly captured by individualistic and economic valuation methods and units. Engaging environmental lawyers in developing an integrated valuation of ecosystem services is therefore advantageous and needed (Mertens et al., 2012). First and foremost, law is a normative science. Differently from the descriptive sciences, normative sciences accept preferences and focus their efforts on the transformation of society in order to choose between scenarios and achieve the desired social and environmental arrangements (Commaille, 2015). This is an important added value to the integrated valuation of ecosystem services, and can substantially improve the action research methodologies which are often

adopted in practice-oriented ecosystem service research (Keune et al., 2015).

In fact, valuing ecosystem services without teleological framework and coherent strategies, leads to ethical deadlocks. One of the most evident is the controversy around the destruction or preservation of the last smallpox virus in 1979, which resulted in the World Health Organization opposing entire eradication and advocating the preservation of a laboratory specimen (World Health Organization, 2010). Other examples of ethical deadlocks or “dis-services” (Lele, 2013) are: the reintroduction of wild species, like the beaver (Sjöberg Göran and Ball John P., 2011) or the bear (Swenson et al., 2000) in natural habitats where they have been extinct for centuries (<https://www.rewildingeurope.com/>); or the rights of indigenous peoples whose cultures collide with the protection of certain endangered species, like the Inuit and beluga in Canada (Theriault, 2011), the Saami and the wolf in Nordic Countries (Darpo, 2015), the Xerente and the golden grass in Brazil (Sampaio Bonesso et al., 2010; ISPN, 2008).

Environmental justice (Sikor, 2013) allows performing ecosystem service valuations while systematically balancing fairness. Far more than being a merely academic theoretical exercise, valuation

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of ecosystem services can help fulfilling social justice and other socially relevant objectives.

This paper proposes five forms of environmental justice (Reisch, 2014) as a rationale and ethical baseline for integrated valuation of ecosystem services. Secondly, the utility of an ecosystem service approach for well-known legal challenges is shown. We conclude that synergies between the two fields are manifold and obvious, and support closer cooperation between ecosystem service valuation and environmental justice in research as well as practice.

The final aim of integrated valuation of ecosystem services is to ensure that ecosystem services are duly taken into account in economic, legal or political decision making. For ecological sciences, the contribution of environmental justice to (integrated) valuation of ecosystem services is to set limits to the acceptability of anthropogenic degradation. From an environmental lawyer point of view, integrated valuation of ecosystem services can produce the scientific evidence necessary to base public or private decisions affecting the environment on more solid grounds.

2. Five forms of justice to guide ecosystem service valuation

The five forms of justice to be taken into account in ecosystem services valuation are: distributive justice, commutative justice, restorative justice, retributive justice and procedural justice. The role of environmental justice is to set absolute limits which are directly dependent on the fairness or unfairness of human induced environmental changes. Alongside with the five forms of justice, a symmetric typology of limits or “injustices” can be drawn. In complement to physical thresholds of human activity, defined by natural sciences, environmental justice defines legal thresholds of acceptability based on fairness. Beyond critical injustice levels, environmental unfairness will not be tolerated. In the following section, the five forms of justice are introduced with examples of their current legal protection.

Distributive justice is the form of social justice more often associated with environmental sustainability (Dobson, 1998, Scholtsberg, 2007). Distributive justice requires granting everyone equal access to the benefits of ecosystem services, without discrimination based on price, economic capacity, ownership, etc. This requirement goes beyond a mere proclamation of equal right to nature, as it requires state intervention to ensure effective access by vulnerable citizens. Social vulnerability is related with the weakest status of minorities (ethnic, racial, sexual, linguistic, etc.), of the elderly, the children, the handicapped, the foreigners, the unemployed, the information underclass and, of course, of future generations. Intergenerational equity deserves special attention. Legal protection of natural capital and ecosystem services for future generations is already a fact both in international and national law. Two examples of international law are the Convention on Biologic Diversity (article 2, §16 and §23 of the Preamble) and the Convention on Climate Change (article 3 no. 1 as well as §11 and 23 of the Preamble), both adopted in 1992.

In national law, about sixty States around the world have opted for the Constitutional protection of future generations (for instance: Bhutan, article 5, Bolivia, article 9 and 33, Brazil, article 225, Egypt, article 32, Ecuador, article 395, Fiji, article 40, Germany, article 20 A, Kenya, article 201, Maldives, article 22, Niger, article 149, Norway, article 112, Timor Leste, article 61). Pioneering examples such as the Hungarian Future Generations Ombudsman, in force from 2008 to 2012 in the Hungarian Parliament (<http://jno.hu/en/>) show that legal protection of future generations can be achieved through dedicated institutions.

On the other hand, public restoration and long term preservation of ecosystem services supply also raises concerns about

intergenerational equity, as present generations bear the costs of the investments while most of the benefits are only felt by the future generations. This entails that benefit and burden sharing activities are necessary to achieve material equality and ensure distributive fairness. In legal terms, distributive fairness depends on *proportionality of cost and benefit*. This proportionality is an essential consideration in development of legal instruments to balance conservation and exploitation of ecosystem services.

Excluding vulnerable populations entirely from access to fundamental ecosystem services, is a **distributive injustice**. A good example of legal implementation of distributive justice is the “water is a human right” citizens’ initiative launched in the European Union in 2013 (<http://www.right2water.eu/>) which stipulates that “*water is a public good, not a commodity*” and the governments shall ensure and provide “*all citizens with sufficient and clean drinking water and sanitation*”.

Commutative justice refers to correct valuation for environmental goods employed for economic purposes. Free of charge extraction, use or exchange of natural capital is intrinsically unfair and likely to work as a stimulus to overexploitation or excessive use (Turner et al., 1993). Taking commutative justice into account requires an appropriate valuation, a correct pricing and a fair payment/compensation for natural capital employed in productive uses, taking into account ecosystem services appropriation. This is valid both for privately owned natural resources and for common resources labelled as public goods or commons. In any of these cases the uses must be frugal and balanced. An example of commutative justice is water pricing which also takes into account the loss of ecosystem services, in addition to economic costs of collection, treatment and distribution: “Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs, having regard to the economic analysis conducted according to Annex III, and in accordance in particular with the polluter pays principle” (article 9 of the **Water Directive, 2000**).

Commutative fairness depends on *equilibrium*. Legal expertise is compulsory to design effective instruments such as subsidies and taxes and payment for environmental services (PES) schemes, and to transfer theoretical concepts to actual societal practice while preventing inequitable enrichment.

Unjust enrichment or activities which impose disproportional advantages for one of the contracting parties in the exploitation and appropriation of ecosystem services for private use are considered **commutative injustice**. For instance, the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization determines that “*(...) benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared in a fair and equitable way with the Party providing such resources that is the country of origin of such resources or a Party that has acquired the genetic resources (...)*” (article 5 no. 1 of the Nagoya Protocol).

Retributive justice stipulates that any relevant human influence – positive or negative – on ecosystem services should trigger a legal consequence. For negative influences, such as anthropogenic degradation of ecosystem services, negative consequences are applied showing that, despite the breach of the legal norm, the values behind it still deserve legal protection. Taxation (Stamatova, 2013), imposing bureaucratic burdens (such as the duties imposed to the operator by the **Directive on Industrial emissions**), blaming and shaming (**European Commission 2000A**, Decision establishing the European Pollutant Emission Register) and even direct sanctioning (**EU Directive on the protection of the environment through criminal law, 2008**) are examples of negative legal consequences intended to have preventive and positive side-effects. For positive human influences on ecosystem services the consequence are positive as well, showing that the legal system

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