

# THE ROLE OF BIODIVERSITY AS INSURANCE AGAINST CLIMATE CHANGE: A LAW AND ECONOMICS PERSPECTIVE

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## **Abstract**

In the recent decades economic tools have become relevant for the conservation of “biodiversity” together with a growing attention from international institutions. For example, the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets formally address the question of how national governments can apply economic tools to improve the state of biodiversity and ecosystems and combine positive conservation outcomes with greater economic and social prosperity. At the same time, economic literature has evaluated the implementation of economic tools for nature conservation. Starting from traditional Pigouvian taxes or subsidies to guide behavior and reduce negative externalities, many other economic instruments has been studied to create economic incentives and pricing mechanisms that stimulate the protection of biodiversity (e.g., conservation easements, resource use fees, tradable permits, offsetting schemes). Since 2007 (Baumgärtner, 2007)<sup>1</sup>, biodiversity has started to be seen as providing “insurance against the uncertain provision of ecosystem services which are being used by risk-averse economic agents”; in this direction, “biodiversity and financial insurance are substitutes. Hence, the availability, and exact institutional design, of financial insurance influence the level of biodiversity protection”. But less has been written on how biodiversity can be a nature-based support for the efficient diffusion of climate insurance financial products. The aim of this paper is therefore to fill this gap, following a law and economics approach, first of all by providing an in-depth analysis of the role that biodiversity can play as a tool to tackle climate change (De Masi, Porrini, 2020)<sup>2</sup>. Second, to define biodiversity support in reducing the level of risk while maintaining the resilience of the system (Valente et al., 2019)<sup>3</sup>. And finally, to propose a new perspective of analysis that serves to evaluate the efficiency of nature-based tools which constitute one of the possible future solutions in the fight against climate change.

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<sup>1</sup> Baumgärtner S., The Insurance Value of Biodiversity In The Provision of Ecosystem Services, *Natural Resource Modeling*, Volume 20, Number 1, Spring 2007

<sup>2</sup> De Masi F., Porrini D., “Climate Change Remedies”, in Marciano A., Ramello G.B. (eds) *Encyclopedia of Law and Economics*, 2021, Springer, New York, NY. [https://doi.org/10.1007/978-1-4614-7883-6\\_616-2](https://doi.org/10.1007/978-1-4614-7883-6_616-2)

<sup>3</sup> Valente D. et al., A First Analysis on The Need to Integrate Ecological Aspects into Financial Insurance, *Ecological Modelling*, 2019, vol. 392, pp. 117-127. doi: 10.1016/j.ecolmodel.2018.11.009