



Economics of biodiversity

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Economics for biodiversity

1. The questions

The current development and its impacts have raised the issue of conserving and maintaining biodiversity. This conservation –whether in situ or ex-situ– will confer costs on society as well as benefits. How this trade-off can be measured and justified? What scale is appropriate to translate this trade-off in collective choices? According to these issues, economic research related to biodiversity can be organised following three directions. A first direction aims at developing a rationale for biodiversity conservation confronted to the risk of irreversible destruction. A second one tries to give an economic measure of the changes in biodiversity and to assess the opportunity cost of biodiversity conservation. The third one, considering the complex public-good nature of biodiversity, emphasises the lack of incentive for its preservation by private agents and the dispersion of the information needed to make socially-efficient choices.

Irreversibility, definitions and measures, free-rider problems, information asymmetries and uncertainties are some of the essential impediments in the protection of biodiversity. These issues define the main questions that drive the current work of the economic researcher involved in the field of biodiversity. Research that aims at understanding these obstacles is needed to clarify the necessity and the nature of public intervention to slow down biodiversity erosion.

2. Research fields

The current research activities of the research groups involved in biodiversity economics, in Montpellier, fall into four headings.

Reflection on biodiversity indexes and measures

Despite promising proposals, the economic dimension of biodiversity measures remains marginal, though it obviously constitutes one of the determining dimensions of conservation policies. What is at stake is a better understanding of the meaning and use of existing indexes and, possibly, the creation of new ones.



Assessment of social desirability for biodiversity and willingness to pay

The literature shows a significant amount of studies that produce values for endangered species or specific ecosystems, but these results are generally rather poor for the appreciation of diversity. A fruitful field of research is the design of negotiation processes that reveal those pieces of information having the property of being incentive compatible and robust with regard to the strategic manipulation of private information (via choice experiments methods).

Institutions and mechanisms designs that account for both the local and the global dimensions of biodiversity

Biodiversity and landscape can be analysed as the joint production of several private and public agents, often implying territorial coordination. On the other hand, biodiversity is both a local and a global public good. The management of the production of such goods implies setting institutions and mechanisms able to take into account this double dimension in governance processes. The potential contribution of geographical indication or markets-based mechanisms for biodiversity conservation is a major field of applied research in Montpellier.

The role of expert/citizen interactions in building projects for the protection of biodiversity

The focus is on the informational gap between these two kinds of agents who are actively involved at the political stages, and the possible ways to improve the information sharing and raising processes. The methodological framework is given by the literature on “merit goods” that tries to model agents that have false beliefs about the consequences of their acts.

3. Programs and collaborations

This set of questions raises both theoretical and applied issues. For both, an appropriate collaboration is necessary to create adequate partnerships. Regarding the theoretical dimension, researchers of Lameta (Um1 - SupAgro) have been involved since its creation within the European BioECon network. This network benefited from the former PCRDT and is organising an annual meeting in Cambridge to share results and confront methodological options.

Applied issues are often related to the agriculture-biodiversity relations in a protected area context (National Park of the Cevennes and the Regional Natural Park of Camargue, Protected areas in LDCS). A collaborative research is developed by Lameta, Cirad, Ird, SupAgro and University on the analysis of institutional arrangements for biodiversity conservation: geographical indication to value and protect biodiversity (South Africa, Senegal, Ethiopia), territorial agreements and Gelose Law (Madagascar), economics tools of the Convention on biological diversity (Brazil, Madagascar). Research in this field allows interdisciplinary collaborations, especially with lawyers, sociologists and natural science researchers.

4. Training

Biodiversity economics cannot – not yet? – be the subject of a complete course; it is nevertheless part of wider course related to environmental economics and natural resource economics, within the Master EGDAAR (Agricultural, Food and Rural Development Economics and Management) jointly proposed at Montpellier-SupAgro and the Economic Department of the University Montpellier 1. Special lectures are given in several other curricula.

5. Conclusion and perspectives

Since the measure and value of biodiversity still is a research programme, the economics of biodiversity may still seem an immature field. Since there is growing evidence of biodiversity decline, understanding how to set efficient conservation policies appears as a necessity. This tension implies working at the same time on the practical and theoretical aspects of these issues. This way is by many aspects uncomfortable, but quite challenging and the only research community aiming at working in this field collectively in France is based in Montpellier and benefits from the support of Inra, Cirad, Ird and Cnrs.



Publications

1. Antona M, Motte Biénabe E, Salles J-M, Péchard G, Aubert S, Ratsimbarison R 2004. Rights transfers in Madagascar biodiversity policies: achievements and significance. *Environment and Development Economics* 9: 825-847.
- 2 Aulong S, Figuières C, Erdlenbruch K 2005. Un tour d'horizon des critères d'évaluation de la diversité biologique/ *Revue Economie Publique* 16: 25-68
- 3 Aulong S, Figuières C, Lifran R 2007. Negotiation processes for the protection of biodiversity. *Environ Res Eco*, in press
4. Aulong S, Figuières C, Thoyer S 2006. Agricultural production versus biodiversity protection: what role for North-South unconditional transfers. *Ecol Eco*, in press
5. Chassany J-P, Rulleau B, Salles J-M 2004. Evolution of Biodiversity Policies on the Territory of the National Park of the Cévennes (France). In *Consequences for the Management of Forests*. Horne P, Tönnies S, Koskela T (eds.), Policy Instruments for Safeguarding Forest Biodiversity - Legal and Economic Viewpoints. METLA, Helsinki, pp 94-121
6. Erdlenbruch K, Tidball M, van Soest D 2007. Renewable resource management, user heterogeneity, and the scope for cooperation. *Ecol Eco*, in press
7. Havlik P, Veysset P, Boisson, J-M, Lherm M, Jacquet F 2005. Joint production under uncertainty and multifunctionality of agriculture: policy considerations and applied analysis. *Eur Rev Agr Eco* 32: 489-515
8. Lifran R, Salles J-M 2004. Préservation de la biodiversité et politiques communautaires : de la confrontation à l'intégration ?. In *Demeter 2005 : économie et stratégies agricoles*, Club Demeter , pp 193-243
9. Mathevet R, Lifran R, Mauchamp A, Poulin B, Lefebvre G. Interactions territoriales, dynamiques des usages et de la biodiversité dans les zones humides du delta du Rhône : une approche par la modélisation multi-agents. *Bull Assoc Geog Fr* 80 : 417-429
10. Thoyer S. et S. Said, 2007, Mesures agri-environnementales : quels mécanismes d'allocation ? In *Conservation de la biodiversité et Politique Agricole Commune de l'Union européenne*. Dubois J, Doussan I (eds), Ceric, La Documentation Française
11. Thoyer S, Tubiana L 2002. Political economy of international negotiations on biodiversity: players, institutions and global governance. *Int J Biotech*: 228-239

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