

# **Trust and Reciprocity in the Market-Based Provision of Public Goods: Experimental Evidence and Applications to Conservation Tenders**

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## **Abstract**

Payments for ecosystem services (PES) and their allocation via competitive tendering processes is an important and innovative instrument in the battle against on-going biodiversity loss. Based on a contractual arrangement between a service provider and a private or public entity willing to buy the conservation service, favourable land management activities or extensive agricultural practices can be stipulated. The advantage of PES is the direct monetary incentive for conservation effort, as a public good, and the potential to achieve a level of environmental protection that exceeds the bottom line drawn by environmental legislation. Its disadvantage is the profound degree of information asymmetry within the contract relationship that results from using environmental goods as an asset and from the nature of economic decision-making.

Analysing the interdependent relationship between competitiveness and compliance, and demonstrating the importance of trust and reciprocity in contracts for environmental goods, this thesis contributes to the rich and multidisciplinary literature on payments for ecosystem services, and conservation auctions in particular. During the past 25 years, practitioners, scholars and scientists have been constantly improving and expanding our understanding on the functioning of inverse auctions for allocating PES contracts. Research mainly focussed on the auction metrics and bidding behaviour, whilst the resulting contract relationships between programme managers as buyers and landholders as sellers have not been sufficiently addressed. However, as shown in this thesis, their relationship is the key to the success of a market-based conservation programme.

In this thesis, three articles set out the argument that trust and reciprocity are relevant in overcoming problems of asymmetric information inherent to competitively allocated PES contracts. A two-stage experimental test scenario, developed for this purpose, simulates the decision-making process in the inverse auction market and the subsequent contract execution in the laboratory. Using this test design in a first experiment, it is demonstrated that conservation auctions bear a profound risk of adverse selection, moral hazard and, thus, suboptimal contract results. However, market failure can be effectively overcome by means of trust-building institutions, such as communication between sellers and buyers. Personal interactions induce market participants to change their individually rational behaviour in a more socially optimal way. However, the social benefit comes at the expense of a certain degree of market bilateralisation. A second experiment illustrates how crucially necessary trust-based contract relationships become if the contracting and provisioning environments are heavily distorted by external, stochastic influences. In this case cooperation almost entirely breaks down due to the lack of trust.

Finally, comparing the results of these two experiments in a third article it becomes obvious that stable long-term contract relationships in auction-based PES programmes ought to be fostered and not be prevented. While, from a conservation point of view, stable and trust-based contract relationships are favourable to random short-term contracting, they are also shown to be more cost-effective in economic terms. This reveals a significant challenge for programme designers to provide sufficient opportunities to build social capital between contractors and maintain fair market structures.