Valuing multiple ecosystem services from forests: cul de sac or challenge for decision-makers?

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Taking inspiration from the ideas developed in the TEEB, MEA, UKNEA, Defra, JNCC and Scotland's policy documents, in this research, we seek to contribute to conceptualising the value of terrestrial ES by analysing methods and scales for primary valuation. The objectives are as follows: (i) to develop a better understanding of the rationale of valuing multiple ES from forests; (ii) analyse the concept of value and key types of value estimates; (iii) assess conventional and wider social science valuation methods; (iv) suggest ways to integrate valuation approaches; (v) assess the impacts of valuation on decision-making processes; (vi) and contribute to answering the questions: how can we value multiple ES from forests and what can the values be used for: showing the opportunities, challenges, uncertainties and complexities of ES valuation.

Valuation helps to inform resource management and use decisions for the benefit of society and the environment. It provides estimates of how ES contribute to the wellbeing. It guides the prevention of damages that inflict costs on society and can help to resolve potentially conflicting decisions, e.g. whether or not to replant woodlands or restore peatlands. Valuation employs a range of techniques; and a variety of methods developed by social scientists are the main focus.

We show that when markets are explicit, direct economic valuation (based on prices e.g. for provisioning ES) is largely applicable. Even for some public goods the user values can still be 'marketed', e.g. using Contingent Valuation (CVM) or Travel Cost (TC) methods. Economic valuation is particularly difficult in the field of biodiversity or landscapes, both as a result of their uniqueness and distinctiveness, and due to a shortage of robust primary valuations. The complexity of ES and their spatial arrangements and dynamics pose further problems. Insufficient understanding of ecological processes, human-environmental relationships and various uncertainties hampers robust economic valuations further, leading to the need to develop our knowledge in order to consider manifold factors necessary to take into account in ES valuation.

The general conclusion is that while markets can provide tools in many cases, they do not work everywhere. Therefore, wider social science approaches and their proper combination and integration can assist in valuation. Valuation should be wider incorporated into decision-making processes; but when public good and intrinsic values issues are concerned, ethical and political choices must be made carefully and deliberately agreed. Much then depends upon government involvement and proper incentives (both non-economic and economic, e.g. PES) towards the changing of our behaviours for a more sustainable use of forests.