

Incentives Tools

Literature Review

An incentive is the offer of a reward or inducement which is designed to induce a desired behaviour (Cooke *et al.*, 2011). Incentives consist of various non-fiscal and non-regulatory tools (Barnes *et al.*, in press) ranging from the financial to the reputational and may incorporate 'nudges' (Thaler and Sunstein, 2008). Similarly, disincentives threaten some form of punishment if an inappropriate behaviour is performed. Incentives include taxes, agri-environment schemes and private payment for ecosystem service schemes and offer an important means for securing land management goals which may protect or enhance the provision of ecosystem services.

Limitations of monetary incentives

Although environmental valuation approaches to incentives are widely used in both academic and policy-making communities (HM Treasury, 2003), there is considerable debate about the validity of these methods. Concerns include: when people have multiple and complex preferences (Spash and Hanley, 1995); where there are intergenerational rights (Hubacek and Mauerhofer, 2008); when people have limited capacities to understand complex goods (Christie *et al.*, 2006); and whether preferences are expressed by individuals, by individuals in a group setting or as a group (Clark *et al.*, 2000).

There is now widespread acceptance that decisions are not made solely on the basis of profit maximisation; decisions incorporate a range of other factors, including rules-of-thumb and replicating the behaviour of peers or others from a social network (Avineri, 2012). Behavioural economics question the rationality of decision-making processes, instead emphasising the role of emotion, habits, customs and concerns about issues such as social and environmental justice (Ashraf *et al.*, 2005). Consequently, there is debate about the economic basis for incentives designed to support the provision of ecosystem services, and a growing recognition that monetary incentives can only influence behaviour to a certain extent. To be successful, monetary incentives must be integrated with other types of incentive and designed with an appreciation of principles from social psychology; e.g. Fiske *et al.*'s (2004) "core motives" approach. For example, PES schemes have been questioned on their ability to incentivise changes in the management of large upland estates, given that not all such estates are profit maximising concerns (Glass *et al.*, 2013b). There is also evidence that interventions that fulfill various motives simultaneously are likely to be most successful; e.g. financial incentives coupled with improved understanding (van Vugt and Samuelson, 1999). Indeed, incentive schemes might be counter-productive if they undermine other core needs; e.g. fines or payments turning a behaviour from an ethical issue to an economic issue (van Vugt, 2009).

Paying for Ecosystem Services (PES)

A good example of this linkage is within agri-environmental schemes, which are effectively publically funded PES schemes. Various studies have examined factors that influence the uptake of these schemes (Defrancesco *et al.*, 2008; Dobbs and Pretty, 2008) and it is apparent that the level of financial incentive offered still remains the principal determinant. Consequently, incentive schemes must be set at a level that can compete with payments available to land managers from other sources, including the market price, if they are to be successful and actually change behaviour. However, as Mather *et al.* (2006) recognize if these changes are only secured through financial inducements alone they remain highly vulnerable as circumstances change.

Other factors that influence the uptake of incentive schemes include transaction costs (e.g. learning about new practices, reporting requirements) and the flexibility of management options (Falconer, 2000; Vanslebrouck *et al.*, 2002). Because agri-environment schemes in the EU (and often elsewhere) are based on the principle of paying land managers for income, they forgo to undertake management for ecosystem services (in order to be compliant with World Trade Organisation regulations), the level of payment available has not always been sufficient to attract large numbers of entrants to 'higher level' schemes that are most closely linked to the provision of ecosystem service.

However, private PES schemes are not restricted in the same way as agri-environment schemes and can set payment levels accordingly. The number of private PES schemes has proliferated in recent years, with schemes neat.ecosystemsknowledge.net

based on the provision of water services (primarily water quality and flood risk attenuation) being particularly popular. For example, in the UK a number of water companies have introduced private PES schemes in an attempt to alter land management practices on water catchments feeding their reservoirs. In many cases, it is cheaper to pay for changes in land management that can improve water quality at source than it is to pay for the provision of new water treatment works. Similarly, carbon offsetting is a source of finance for woodland creation under the UK Woodland Carbon Code that can be used as part of corporate carbon accounting under CC's Greenhouse Gas Accounting Guidelines.

Defra's PES Best Practice Guide (Smith *et al.*, 2013) provides examples of a range of private PES schemes. This guide emphasizes the need for PES schemes to couple monetary incentives with an understanding of the wider needs and preferences of potential buyers and sellers, and an understanding of organizational, legal and technical issues. Monetary incentives alone are unlikely to facilitate major shifts in the management and provision of ecosystem services; therefore careful consideration must be given to the design of such incentives.

Summary

Incentives take many forms but may be differentially important to different cultures and stakeholder groups. However, evidence suggests that monetary incentives are particularly important where the market economy dominates, disproportionately influencing resource management decisions. Consequently, most incentive tools applied to the management of ecosystem services in a UK context are monetary-based. However, there is increasing evidence that monetary incentives alone cannot incentivise all forms of management behavior that may be desired with land management decisions drawing on a range of internal (psychological) and external (monetary and social) incentives.