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Agri-environment schemes: Farmers' acceptance and perception of potential 'Payment by Results' in grassland—A case study in England

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ABSTRACT

The implementation of a 'Payment by Results' (PBR) approach to agri-environment schemes (AES) can further increase their ecological and economic efficiency. The aim of this case study was to assess farmers' perception and acceptance of potential PBR using the example of England and to evaluate aspects of importance to the implementation of PBR. Face-to-face interviews were conducted with 32 farmers in the English region of 'Yorkshire and The Humber'. A semi-standardised questionnaire, which included an example-PBR-option for maintaining and enhancing species-richness in grassland, was developed. The results show that the majority of farmers in this case study accepted PBR. Acceptance was significantly influenced by farmers' age, experience with AES, farm size and abundance of pre-existing environmental features. If PBR was introduced, farmers would seek more advice. However, the actual willingness of farmers to join a full PBR scheme instead of an action-based option is still questionable. An approach combining a maintained with an enhanced PBR element with different target levels emerged as a possible way forward.

Introduction

Agricultural intensification has had a substantial influence on ecosystems, landscapes and natural resources of rural areas. Degradation of the environment, such as a decrease in biodiversity, deterioration of water quality, soil erosion or an increase in greenhouse gas emissions are possible consequences (Kruess and Tscharntke, 1994; Edwards and Withers, 1998; Montgomery, 2007; Smith et al., 2007). Major instruments to counter or reduce these effects are Europe's agri-environment schemes, which are already well established within the EU member states and have been obligatory since the 'McSharry reforms' of the Common Agricultural Policy (CAP) in 1992 (EC, 2010). The European Commission's (EC) legislative proposals for a reform of the CAP after 2013 (EC, 2011) illustrate the increasing importance of environmental aspects in general and of supplying public goods in return for CAP expenditures. However, even though the eligibility of some AES expenditures could be disputable due to potential requirement duplications with the greening obligations of the CAP's first pillar and the EU co-financing of AES is supposed to be reduced, agri-environmental measures are nevertheless destined to play a prominent role in rural development policy. The European Court of Auditors (ECA) (2011) stated that agri-environmental expenditures should be targeted more precisely and that many current objectives are not specific enough to assess whether they have really been achieved. Kleijn et al. (2006) found that in five European countries, the positive effect of AES on biodiversity was only marginal to moderate and that the ecological effectiveness of AES must generally be improved. The economical cost-effectiveness of AES has been widely criticised, for example, by Kleijn et al. (2001), Kleijn and Sutherland (2003), Marggraf (2003), EC (2004), Whitfield (2006), and Whittingham (2006). The European Commission has also called for a more efficient use of resources and funds (EC, 2011). Matzdorf and Lorenz (2010) attribute this increasing pressure to the decrease in public funds as a result of the enlargement of the EU.

'Payment by Results'

A possible approach to address the challenges outlined above, and to further develop the AES, is to implement a so-called 'Payment by Results' approach. This approach was explicitly welcomed by the European Court of Auditors (2011) and has been widely advocated by environmental associations and scientists (Oppermann and Briemle, 2002).

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The principle of PBR can generally be understood as a financial reward for a certain ecological outcome rather than for a specific environmentally friendly land management practice. A major requirement for the successful implementation of this approach is the need to define indicators for the desired ecological goods (Gerowitt et al., 2003; Groth, 2010). Close links between farmers' actions and the desired environmental outcome are important because the results are not always entirely under the control of the land manager. Otherwise, farmers are faced with a financial risk. This point needs to be considered when designing a scheme. Furthermore, the PBR requirements must be simple, applicable at the local level and easily understandable by farmers and others (Schwarz et al., 2008).

In general, the PBR-approach has attracted increasing international interest and in grassland, for instance, several projects and experimental prototypes have tested the applicability of certain plant species as PBR-indicators for grassland management, e.g., in a pilot project in the Northeim County, Germany (Klimek et al., 2008). In the EU, this approach was first introduced as an AES in Baden-Württemberg, Germany, in the year 2000 and was subsequently introduced in other German federal states. In Baden-Württemberg, the PBR scheme was established as a voluntary top-up option in addition to the existing action-based AES for extensive grassland management. The requirement for participation was the abundance of 4 indicator species out of a catalogue of 28 species. The payment was 10 €/ha in 2000 (Briemle, 2000) and is now 50 €/ha (MLR, 2008). The uptake of the PBR programme was 35,000 ha in the beginning (2000), which was 6% of the total permanent grassland. Between 2000 and 2006, the average annual area under PBR management was 55,000 ha, representing 10% of the total permanent grassland (Doluschitz et al., 2008). For the programme period of 2007–2013, the overall target for the number of applications was exceeded by the end of 2009 (Schramek et al., 2010). On average, 4200 fields are monitored by random control visits each year; of these, only 0.9–1.4% result in a violation of obligations (Glemser, 2011). Oppermann and Briemle (2002) found that farmers' acceptance of the new PBR scheme was already high after the first year of implementation and that farmers were proud of the results. Because farmers had to measure the species themselves, Oppermann and Briemle (2002) assumed a high cost-efficiency and noted the advantages of the resulting data availability on species abundance. Matzdorf and Lorenz (2010) underlined the suitability of the approach to preserve species-rich grassland in Baden-Württemberg, the flexibility of the approach and the positive change in farmers' attitudes towards nature conservation due to participation in PBR.

A number of other studies have emphasised the advantages of PBR-compared to an action-based approach, including an increase in ecological and economic efficiency through its implementation (Hespelt and Bertke, 2003; Morredu, 2007; Schwarz et al., 2008; Klimek et al., 2008; Groth, 2010; Bertke et al., 2010). In this context, Klimek et al. (2008) noted the ecological advantage of using farmers' knowledge and experience, as well as the obvious increase in economic efficiency, because money is only spent if the desired outcome is achieved. Similarly, Matzdorf and Lorenz (2010) provide evidence for an enhancement of the cost-effectiveness of AES when a PBR-approach is introduced. Thus, the legitimacy of spending public money to support AES can be improved. Furthermore, an increased interest among the participating farmers during the duration of the pilot project was reported. This is assumed to be due to the higher flexibility for farmers' action in the scheme. Ulber et al. (2011) found that farmers enrolled an increasing amount of land while the scheme was in effect and inferred from this that the farmers' interest in and acceptance of the scheme were growing. In the case of Lower Saxony, Germany, Bertke et al. (2010) established that farmers prefer a PBR-approach instead of an action-based AES, although Matzdorf and Lorenz (2010) found that many farmers also prefer a combination of an action-based reward system and a PBR-approach.

Farmers' behaviour, attitudes and acceptance towards AES

The farmers' participation in AES is voluntary. Consequently, a high level of acceptance, especially for a new type of scheme such as the PBR-approach, is an essential requirement for its successful implementation. Sattler and Nagel (2010) found that the perceived risk, effectiveness, or time and effort required for implementing measures are the most important factors affecting the willingness of farmers to join.

In addition to economic issues, expressive and intrinsic values, individual factors and the socio-cultural system within which individuals are located play a major role in attitudes of farmers and their everyday-decision-making and long-term planning (Garforth et al., 2006). Although there is a consensus that factors such as farmers' age, education and experience with AES, pre-existing environmental features, and the size and type of the business or ownership can have an influence on farmers' acceptance of environmental protection and AES, inconsistent results have been reported about the direction in which these factors influence acceptance (Bultena and Hoiberg, 1983; Segalen, 1987; Carlson and McLeod, 1977; Gould et al., 1989; Jacobsen et al., 1991; Walford, 2002; Siebert et al., 2006, 2010; Ahnström et al., 2008).

Research needs

PBR schemes are one possible approach to further develop AES and address the challenges presented by the EC and the ECA. The acceptance by farmers of new schemes is essential for the successful implementation of these schemes, but this issue has not been sufficiently explored for PBR to date. This paper aims to investigate the criteria of importance to this issue.

In England, the PBR-approach has not been implemented in the AES, but it has been considered (Peel and Chaplin, 2008; Schwarz et al., 2008; Defra, 2011b). In general, the English government actively supports environmental conservation and a financially strong second pillar of the CAP, with a focus on results and efficiency (Defra, 2011b,c). Hence, the following research questions are addressed using the example of England:

I Would the farmers accept an example-PBR-approach in grassland, and if so, how much payment would they require to accept certain result-levels?
II What do farmers think about the advantages and disadvantages of PBR?
III Do farmers feel confident about meeting the requirements of a PBR-approach?
IV Do relationships exist between farm and farmer characteristics and the acceptance of PBR?

Methods

To achieve the study objective, interviews with farmers about their perceptions of potential PBR were conducted in the 'Yorkshire and The Humber' region in summer 2010 (see Fig. 1).

Case study approach

The selected methodology was a case study approach in a clearly delimited study area with a manageable sample size and effort. This explorative approach allowed for an initial assessment of issues regarding the introduction of PBR into AES and the provision of