



# The roles of farm advisors in the uptake of measures for the mitigation of diffuse water pollution



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## ABSTRACT

Governments face increasing pressure to implement effective policy to reduce diffuse water pollution from agriculture (DWPA). Various strategies and combinations of policy mechanisms have been adopted by different countries to change farmer behaviours with varying degrees of success. This paper focuses on the use of advice delivery to farmers as a mechanism to encourage uptake of DWPA mitigation measures on farms in England.

Farm advisory services in England have dramatically changed over recent years, with concerns that the sector has become fragmented due to many organisations and businesses offering advice. This paper studies the role of various farm advisors and organisations providing one-to-one advice by interviewing 81 farm advisors in three agriculturally contrasting regions of England: East Anglia, the North West and South West. Objectives were to assess: which DWPA mitigation measures are being recommended by different advisors? How do recommendations differ between sources of advice and is there any conflict? And which mechanisms do advisors use to influence uptake of advice?

Results from the interviews indicate that the advice delivered and the mechanisms used to influence uptake of advice vary between organisations and some advisors do indeed have particular roles within the farm advisory sector. Policy makers therefore need to consider not only what mitigation measures should be encouraged, but also which organisations and advisors are best placed to deliver on the ground advice to farmers. There is also scope to incorporate understandings of farm advice provision into catchment management plans to aid effectiveness of future agri-environmental policy.

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## 1. Introduction

The European Union's Water Framework Directive (WFD) requires member states to achieve 'good ecological and chemical status' in all surface waters over a cycle of programmes of measures. Although legislation has been effective at reducing point source pollution from industrial activity (OECD, 2012), less success has been achieved regarding diffuse pollution, with agriculture being a large contributor of nitrate and phosphate in many member states (OECD, 2008, 2012; NAO, 2010).

A wide variety of mitigation measures exist which farmers can implement to reduce water pollution from agriculture (Newell-Price et al., 2011). Some measures are already accepted as standard farm practice and widely adopted (e.g. not spreading manure or slurry to fields at high risk times) whilst others are implemented less widely (e.g. establishing cover crops) (Vrain et al., 2014). Pressure therefore exists for governments and other organisations

concerned with water quality to increase the uptake of additional mitigation measures by engaging with and influencing farmers' behaviours to achieve public policy goals (Garforth et al., 2003).

### 1.1. Mechanisms to influence farmer uptake

A number of different mechanisms operating at varying spatial scales (McGonigle et al., 2012) are available for governments and other organisations to influence the uptake of mitigation measures on farms. Such mechanisms include: enforcing change through regulations; providing incentives such as agri-environment scheme (AES) annual payments, consumer quality assurance schemes or capital grants and encouraging voluntary behavioural change by disseminating knowledge through the provision of advice at farm demonstrations, events, and one-to-one farm visits or through supporting industry led campaigns (OXERA, 2003; RPA, 2014; Aue and Klassen, 2005). Internationally, debate exists regarding the effectiveness and benefits of different combinations of the various mechanisms (Smith et al., 2015). Despite evidence of regulations, taxes and subsidies requiring substantial financial resources and administrative support (Brouwer et al., 2003; McGonigle et al.,

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2012; OXERA, 2003; Andrews and Zabel, 2003; Heinz et al., 2002), some countries largely rely upon such mechanisms e.g. Germany and Denmark (Johnson et al., 2011), whereas others predominantly use alternative, cost-effective alternatives such as advice provision (OXERA, 2003) e.g. Austria (Opancar, 2014).

Within England, a mixture of mechanisms have been adopted. At the national scale, regulatory baselines have been set, predominantly to comply with EU legislation. Regulatory examples include Nitrate Vulnerable Zones (NVZs) to comply with the EU Nitrates Directive, Silage, Slurry and Agricultural Fuel Oil regulations (SSAFO) and Common Agricultural Policy (CAP) Cross Compliance. As such baselines are not sufficient in themselves to achieve WFD 'good status' (Kay et al., 2012) additional mechanisms need to be applied at a targeted local scale (UKWRIP, 2011). Approaches included, financial support through AES payments and the provision of advice through the Catchment Sensitive Farming (CSF) initiative.

At present, there is substantial emphasis on voluntary uptake of measures by farmers to achieve policy objectives and, for example, a number of initiatives from within the agricultural sector have sought to increase levels of uptake and influence the types of measures adopted e.g. The Campaign for the Farmed Environment (Clothier and Pike, 2013) and Get Pellet Wise ([www.getpelletwise.co.uk](http://www.getpelletwise.co.uk)). More broadly, it has been recognised that there is a need for more evaluation of such activities to inform understanding of best practice (Fazey et al., 2012).

### 1.2. The changing role and provision of farm advisory services in England

The role of farm advice includes the enhancement of farmer skills and access to knowledge and information (Labarthe et al., 2013), acting as a trigger for change (Dwyer et al., 2007). Through advice, improvements to existing practices and adoption of new ones can be achieved to increase the performance of farm activities (Proctor et al., 2011; Phillipson et al., 2014). Farm advisors act as crucial knowledge brokers for science to be implemented on the ground, with farmers looking for their advisors to absorb complex, ambivalent messages from diverse sources, and to translate and repackage them into terms they can understand and act upon (e.g. Proctor et al., 2012). Nevertheless, over time the role and focus of advisors has changed.

Following WWII, the UK Government provided farm advice focussing on improving production, however, since the mid 1980's, the Government has taken the view that production and farm management advice are essentially private rather than public goods and should therefore be provided by the market on a commercial and competitive basis (Garforth et al., 2003). The result has been further diversity in the advice sector in order to fill the gap left by the repositioning of previously public advisory organisations such as ADAS (Prager and Thomson, 2014). Advisors have had to adapt their role over time with evolving policy and the changing demands of those receiving advice. Advisors now not only have to help farmers improve competitiveness and resource efficiency, but they must also ensure farmers follow regulations (Cowap and Reed, 2013), deliver environmental objectives and contribute to the wider sustainable intensification agenda (AIC, 2013).

The diverse farm advice sector which has evolved in England is considered to have both advantages and drawbacks. Garforth et al. (2003) believes the sector benefits from efficiency, competition, flexibility, choice and reductions in public funding, however others are concerned that fragmentation has occurred leading to inconsistent, conflicting or duplication of messages (AIC, 2013). Such fragmentation is believed to create difficulty for farmers to decide which advice to follow (Angell, 2007; Winter et al., 2001) and may result in message fatigue and advice being ignored (Kahan

et al., 2012; AIC, 2013). Government reports spanning over a decade consider the sector to be inadequate for meeting farmer requirements and have called for a streamlining of advice (Cabinet Office, 2002; Farming Regulation Task Force, 2011; Foresight, 2011; HM Government, 2011). On the contrary, Klerkx and Proctor (2013) claim assumptions of a collapse of interaction within the advisor sector are not supported by evidence. Such debate in the literature highlights the need to investigate whether problems such as conflict, duplication or inconsistency exist in the existing pluralistic farm advice sector.

Further reasons to study the farm advisor landscape arise from the growing emphasis for governments to use non-regulatory mechanisms (UKWRIP, 2011) and local scale approaches (Green et al., 2013). Financial cutbacks have created further pressure to reduce government spending, with England hoping to reduce its spend of £20 million per year on administering and delivering government advisory schemes and initiatives to farmers by 25% (Defra, 2013). To achieve such a goal, the review of 'Advice and Partnership Approaches' published in March 2013 highlighted that government advice needed to be clearly targeted and linked to that provided by other advisors, rather than duplicating or creating confusion (Defra, 2013). Nevertheless, without a better understanding of the advisory landscape, it is not possible to know who does what and where in order to increase efficiency and effectiveness.

Several studies have attempted to summarise different aspects of the farm advisory landscape within the UK. Defra (2013) provides an illustrative representation of the different sources of environmental advice in England, but only includes the public sector and professional bodies providing advice on behalf of the Government. Another review was undertaken through the Value of Advice project, but focused solely on how the commercial sector delivers professional advice to farmers (AIC, 2013). The most relevant report to date lists all actors in Agricultural Knowledge Information Systems (AKIS) in the UK (Prager and Thomson, 2014). Despite such recent assessments, none focus specifically on the provision of DWPA advice to help meet WFD targets.

### 1.3. Current DWPA advice provision

As DWPA has risen up the policy agenda, many areas of the industry have become involved in DWPA advice dissemination. Government agencies, land agents, large agri-consultancies and independent specialists (for example in the fields of agronomy, veterinary care, feed supplies, and agri-chemicals) all offer advice regarding elements of DWPA mitigation. Furthermore, even organisations and businesses not directly related to agriculture, such as not for profit environmental organisations and water companies, have realised the potential for influencing farming practice through delivering advice to farmers (Devon Wildlife Trust, 2012; Inman, 2005; Wessex Water, 2011; Eden Rivers Trust, 2014; RSPB, 2014).

One-to-one delivery is generally considered to be the most effective at encouraging uptake of advice (Dwyer et al., 2007; Blackstock et al., 2010; AIC, 2013; CSF Evidence Team, 2014) and so is the focus of this research. Table 1 summarises the main providers of one-to-one advice to farmers from the government sector; not for profit environmental sector and the agricultural business sector.

A key development in this area has been the role of the CSF initiative established in 2006. CSF officers (CSFOs) cover eighty priority catchments in England, providing free advice to farmers on mitigation measures in areas at high risk of failing the WFD and offering capital grant incentives to help encourage behaviour change (Natural England, 2014). The national CSF programme has also collected evidence on scheme effectiveness, with CSFOs reporting each recommendation made (approximately 112,000 over six years) into a central database and a sample of farmers being

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