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# Achieving on-farm practice change through facilitated group learning: Evaluating the effectiveness of monitor farms and discussion groups

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ABSTRACT

Group extension promises to be more effective than conventional approaches, in particular when combined with participatory approaches, but little is known about how group extension approaches work as part of advisory programmes in a European context and the factors that influence their success. This paper investigates two examples of group extension for knowledge exchange and innovation among farmers: discussion groups within the Beef Technology Adoption Programme (BTAP) in Ireland and monitor farms in Scotland. An analytical framework is developed for the systematic analysis of group extension approaches as embedded in advisory programmes. Drawing on empirical data from qualitative interviews, participant observation and document analysis, we analyse how the design of an extension programme shapes its delivery, its outcomes and the measurability of outcomes. We distinguish levels of learning and adoption, and argue that in general these are higher for discussion groups than for the wider monitor farm participants, although the most substantial practice changes can be expected for the monitor farmer. We conclude that the more structured the group extension approach and the more detailed the programme targets, the more likely it is to achieve the expected (technology adoption) outcomes. However, such a prescriptive programme will struggle to simultaneously encourage farmer-led processes. The more open and flexible the approach, the more potential options for experimenting and learning are created, but this requires farmers to adopt a mindset of being active knowledge creators rather than knowledge consumers, and outcomes are more difficult to measure.



## 1. Introduction

Although "the days when agricultural extension was synonymous with the work of public sector agencies are over" (Cristopolos, 2010, 1), governments across Europe are still involved in the design and implementation of agricultural advisory programmes. Advisory services are increasingly viewed as an important driver in enhancing innovations in agriculture (European Commission, 2010; Faure et al., 2012; Leeuwis, 2004). The aim of such programmes is "to foster and implement innovation where appropriate at the farm field level" (Rivera, 2011, 165). However, whether an innovation is considered 'appropriate' is situation specific and can be highly contested. An advisory organisation may want to influence different kinds of decision making, such as adoption or management of a technology, a change in farming systems, or collective decision making on resource use (van den Ban, 2000). The original goals of the programme, the underlying theory of change, and different evaluation perspectives all have implications for the evaluation of a programme (Mayne and Johnson, 2015). This paper will focus on evaluating the effectiveness of using group extension approaches in advisory programmes.

This evaluation raises two interrelated problems. The first is the problem of how to define the notion of effectiveness, and thus 'what to measure'. The second is the problem of 'how to measure', i.e. the appropriate evaluation method(s). The evaluation literature to date is dominated by economic evaluations trying to determine whether the budget invested in a programme or project was well spent. Such evaluations were expected to produce insights on the extent to which advisory services improve agricultural productivity and farmer income (Anderson and Feder, 2004). In developing countries, banks in particular were interested to see return on investment in extension services (Alex et al., 2002), and in a European context, governments used the estimated return on investment of public funds to help justify public spending (e.g. Hill et al., 2017). A

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more recent development in programme evaluation follows principles for effective extension agreed by the World Bank and FAO (AKIS/FAO, 2000; Alex et al., 2002). Accordingly, advisory programmes need to be participatory, i.e. drawing on and empowering local people to solve problems and mobilize local resources. This aim is very different to increasing technology adoption, and requires different approaches. Participatory extension has become popular because these approaches were shown to be more effective than conventional extension programmes in stimulating farmers' acceptance of new practices (Garforth et al., 2003; van den Ban, 2000). Programmes often combine participatory approaches and group methods so that evaluators and scholars alike are challenged to disentangle the effects.

The difficulties in measuring impact of extension and advisory services (the terms are used interchangeably) have been widely acknowledged (Alex et al., 2002; Anderson and Feder, 2004; Swanson and Rajalahti, 2010). Difficulties relate to attributing impacts, context specificity, lack of baseline data and the complexity of learning and adoption processes (Hill et al., 2017). There is a wealth of studies exploring extension projects (in particular in developing countries) and specific extension methods, reflecting the expectation of a 'methods fix'. This means that the close association between extension and projects carried with it the assumption that with the 'right' method, extension agencies will achieve new objectives (Cristopolos, 2010, 8). However, there is a lack of studies that take a holistic view on evaluating the effectiveness of methods and approaches as part of advisory programmes, and the wider institutional structures and organisations as demanded by Cristopolos (2010).

This paper takes such a holistic view and does not limit the evaluation of effectiveness of group extension in advisory programmes to adoption rates. The aim of this paper is therefore to analyse how different factors shape participatory group extension approaches and to qualitatively assess the levels of learning, knowledge exchange and practice change that result from such approaches. Building on an analytical framework that captures the characteristics of the advisory programme and the group extension approach, we analyse monitor farms in Scotland and discussion groups within the Beef Technology Adoption Programme (BTAP) in Ireland. The two examples are used to provide a richer picture of how group extension is implemented in different institutional contexts than could be generated from the analysis of a single example. We combine learning and adoption theory with programme evaluation to discuss the linkages and trade-offs between increasing adoption rates, encouraging farmer-led processes, and allowing for experiential learning. The insights contribute to a better understanding of the benefits and limitations of group extension approaches as embedded in their institutional context.

## 2. Theoretical background and analytical framework

### 2.1. Types of advisory approaches

Previous studies have used various typologies to classify and describe advisory services. Some of them focused on the way services are financed and delivered (Alex et al., 2002; Rivera and Cary, 1997), while others distinguished 'strategies or models' Black (2000) or 'models and approaches' (Swanson and Rajalahti, 2010), based on provider, advisory method and target group (Alex et al., 2002). Many typologies do not clearly separate the teaching and learning methods that extension agents or advisors use in their interaction with the client, and the broader approach or strategy that these methods are embedded in. These broader strategies are generally linked to the objectives pursued by the entity offering the advice and the country's agricultural and rural development policy.

The literature on advisory services distinguishes between 1) the linear 'top-down' transfer of technology; 2) participatory 'bottom-up' approaches or producer-led extension; 3) commercialised extension or commodity/market-oriented advisory services, based on one-to-one information provision; and 4) formal or non-formal education and extension approaches (Alex et al., 2002; Black, 2000; Swanson and Rajalahti, 2010). For completeness, some also distinguish the category of mass media extension.

This study focuses on participatory approaches that involve group methods. Participatory approaches represent a more recent trend, where extension is no longer one-way knowledge transfer with the advisor as an instructor who delivers the knowledge, but the advisor is a facilitator who helps farmers make their own decisions (Röling, 1988). This was described as a paradigm shift in extension (Anderson and Feder, 2004). The range of participatory approaches includes different programs and models including farmer field schools, a popular education and extension program mainly in developing countries around the world (Anderson and Feder, 2004; Davis et al., 2012); agro-environmental partnerships in the USA (Getz and Warner, 2006); agri-environmental advisory clubs in Canada (Tamini, 2011); monitor farms in New Zealand (Campbell et al., 2006) and the UK (Creaney et al., 2015); and discussion groups documented in many countries including New Zealand, Australia (Parminter, 2010), Ireland (Läpple et al., 2013) and England (Coleman et al., 2010).

All these examples of participatory extension models are built around groups, and associated with a number of benefits including higher rates of adoption and practice change; positive effects on yield, income and productivity; greater well-being, increased knowledge and skills associated with empowerment; and the availability of peer support (Coutts et al., 2005; Davis et al., 2012). Influential elements are the participation of a wider set of people, reduced focus on technology transfer or adoption, coupled with an emphasis on farm visits, demonstration and farmer-to-farmer learning that allow participants to seek further learning opportunities and increase their skills (Getz and Warner, 2006; Millar and Curtis, 1997).

### 2.2. Defining the notion of effectiveness – 'what to measure'

Evaluating the effectiveness of participatory group extension approaches faces tensions because they often sit between different sets of objectives. Funders may still follow the intervention logic of the technology transfer extension model which is generally linked to the policy objective of technology transfer to achieve food security and to increase farmer income. In contrast, participatory extension approaches are linked to a different objective, that is to organise and empower farmers by building social capital (Swanson and Rajalahti, 2010). Coutts et al. (2005) take this further and consider the 'group facilitation/empowerment model' as the most successful model in terms of aiding effective knowledge exchange to improve the problem-solving abilities of the farmers involved. Participatory approaches where farmers decide which changes are desirable and what kind of support is needed "requires that the extension organisation becomes a learning organisation with the ability to discover which changes are desirable in each specific situation" (van den Ban, 2000, 16). Such approaches would take farmers' objectives as the basis for the evaluation, which may be at odds with the extension organisation's objectives.

The evaluation of the effectiveness of a specific approach has to take into account concepts of programme/policy evaluation as well as theory relating to learning and adoption. This combination of insights is necessary to capture the interrelationships between the objectives of an advisory organisation and a programme, the choice of the extension method and the outcomes in terms of learning,