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# UNDERSTANDING INFLUENCES ON FARMERS' PRACTICES

## ABSTRACT

Andy Lane ([andy.lane@open.ac.uk](mailto:andy.lane@open.ac.uk)) and Sue Oreszczyn  
([sue.oreszczyn@open.ac.uk](mailto:sue.oreszczyn@open.ac.uk))

The Open University

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### Abstract

Farming is a complex human activity system with many actors and many components. Farming is also an activity that has, in recent decades, been ascribed two major, but potentially conflicting, objectives: the short to medium term production of sufficient food to support socio-economic driven needs of security and stability and the medium to long term philosophical and aesthetic desire to manage and conserve the 'natural world'<sup>1</sup>. While there have been attempts to reconcile these different objectives both theoretically, as with the concept of Ecosystem Services<sup>2</sup>, and practically through Agri-environment schemes<sup>3</sup>, all too often these innovations have been provided *for* farmers by others without sufficient regard to the farmers' own practices and contexts. This is in contrast to being developed *with* farmers, using their experiential knowledge to shape those innovations both before and after adoption and implementation. Indeed our main thesis is that the differing perspectives of the many actors, and in particular the perspectives of farmers versus other actors, leads farmers to use knowledge management practices that mix and match information from a variety of trusted sources to suit the needs of their farming business. If external knowledge and innovations are to support sustainable intensification then they must also be matched with an understanding of the practices and contexts in which they are to be deployed. In this paper we set out

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<sup>1</sup> E.g. the Lawton report at <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

<sup>2</sup> E.g. reports at <https://www.gov.uk/ecosystems-services>

<sup>3</sup> E.g. reports at <http://www.naturalengland.org.uk/ourwork/farming/funding/aesiereport.aspx>

some key considerations that researchers have raised about innovations, practices and knowledge exchanges around farming that can influence both productivity and environmental performance.

Firstly, *innovations* within agriculture have been dominated by a discourse based upon a transfer of technology model whereby a new technological product or process is developed and tested through commercial or publicly funded R&D and then ‘released to the market’ (Rogers, 2002). Both the product/process and accompanying information, advice and guidance are then disseminated through varying channels, often with an assumption that there will be field advisors acting as agents of knowledge exchange<sup>4</sup>. Knowledge exchange is discussed below but a key feature is that the knowledge exchange is not just one way from (scientific) innovators to (farmer) users via (advisor) intermediaries. Neither is it two-way between these sets of actors. Rather, it is participatory and multi-lateral in the way knowledge about products and processes is created through action research and does not stop once an innovation has been ‘adopted’. Thus, agricultural knowledge and innovation systems are comprised of organisations and individuals, linked and interacting through networks who are engaged in creating, sharing, and using different types of knowledge to support innovation in agriculture<sup>5</sup>. These complex relationships work together within, and as part of, a wider local, regional, or national context of economic and regulatory frameworks. A key feature of such participatory processes is the way they attempt to address the differing power relationships between actors in social settings and use the participants as key partners in the research, development, implementation and evaluation cycle<sup>6</sup> for innovations.

Secondly, *practices* within agriculture can be viewed through the lens of theories of practice and what may be required to affect change in such practices (Watson, 2012), or through the lens of social learning as a key basis for communities of practice, networks of practice, and webs of influence (Oreszczyn et al, 2010). Theories of practice, where practices are seen as routine behaviours arising from combinations of physical activities, mental activities, technologies and their uses, have not been good at accounting for changes over time. This may be helped by considering ‘systems of practice’ within defined socio-technical systems. In this way small, but incremental, change in practice at the micro-level (e.g. use of herbicides) can lead to large transitions in behaviour at the macro-level (e.g. shifts from spring to autumn sown crops), that impact on productivity and environmental performance, particularly where there are accompanying changes in infrastructure that support such practices. In contrast, the concepts of

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<sup>4</sup> For example see RELU Policy and practice Notes No. 30, July 2011, available at <http://www.relu.ac.uk/news/policy%20and%20practice%20notes/Proctor%2030/PPN30%20Proctor.pdf>

<sup>5</sup> For example see [http://www.oecd-ilibrary.org/agriculture-and-food/improving-agricultural-knowledge-and-innovation-systems\\_9789264167445-en](http://www.oecd-ilibrary.org/agriculture-and-food/improving-agricultural-knowledge-and-innovation-systems_9789264167445-en)

<sup>6</sup> For example see the work of Robert Chambers at <http://www.ids.ac.uk/person/robert-chambers>

communities and networks of practice (Wenger, 2000; Brown and Duguid, 2001) consider how participants learn within and as part of a community or a network under the assumption that effective learning often takes place in social settings. As we have ourselves have found (Oreszczyn et al, 2010), farmers can display a particular type of network of practice, characterised by a weak organisational framework but with a relatively stable network of other communities of practice (or networks of practice) they interact with, which we have called a ‘web of influencers on practice’. Together, farmers’ network of practice and their web of influencers on practice represented the whole environment in which learning might occur, and so provided insights into their social learning system. Significantly, most farmers have to work at the boundary of their network of practice and their web of influencers, which creates a significant load on their knowledge management practices. This is in contrast to other networks of practice where only some members take on this boundary, knowledge brokering role.

Thirdly, there are growing debates not just about the differing types and nature of knowledge noted above, but also about how such types of knowledge are exchanged between the actors in the farming system. Indeed, *knowledge exchange* is but one of many terms used in agricultural extension and related sustainability fields (Faizey et al, 2012) which often influences how this area is discussed and researched. The focus on farmer involvement in research has led to a categorisation of four types of knowledge in play in agricultural knowledge and innovation systems: *know-what*: information, knowledge of facts; *know-why*: knowledge of scientific principles; *know-how*: skills or capability to do something; and *know-who*: social skills to access know-how of others. However, these are not always acknowledged or brought to the fore in many innovation systems. Gaining a better and more shared understanding of the system and the connections between the actors can be facilitated by the use of visual methods to both capture knowledge and provide a focus for discussions. Our own work at getting actors within a knowledge and innovation system to map knowledge flows and to capture the associated discussions, often shows the complexity of knowledge exchanges that occur and the large number of organisations involved (e.g. Thomas et al, 2009; Oreszczyn and Lane, 2012). Such mapping activities can be important for highlighting gaps in the types of knowledge and flows that are occurring and provide inputs to further research, development, implementation and evaluation of innovations.

**Keywords:** Sustainable intensification, influences, farmer practices, knowledge flows, communities of practice, networks of practice, webs of influence

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