Improving implementation and increasing uptake of measures to improve water quality in Scotland

Julia Martin-Ortega and **Kirsty Holstead**
The James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8QH

The James Hutton Institute

CONTEXT:

As well as how to improve the effectiveness of policies to address water quality problems, there needs to be an understanding of how to improve implementation and uptake of measures by land managers and other key stakeholders.

DATABASE – What?

The James Hutton Institute has created a live dynamic database of work that has been carried out in Scotland related to deepening knowledge of factors, barriers and opportunities that influence implementation and uptake of measures to mitigate water quality problems.

This database is concise and focused on improving implementation and uptake.

DATABASE – Where?

You can access the database at:

www.hutton.ac.uk/guidance-to-improve-water-quality

DATABASE – Who?

This database is aimed at providing guidance and advice to policy makers, land owners and managers, researchers and other stakeholders.

To browse the database more readily, the information is categorised:

- **Focus:** The main focus of projects in the information system is water quality. Flooding is also a very important aspect of water management in Scotland, so outputs of some flooding related research are also included.
- **Aspect:** These projects focus on four keys aspects: **barriers and opportunities** to improving implementation of measures; **behaviours** influencing uptake of measures; **perceptions** regarding the measures; and **awareness** raising initiatives.
- **Scale:** Projects and activities looking at the national Scottish level, the catchment level and the sub-catchment level.

A dynamic database:

The database is dynamic meaning that it is updated regularly and fed with new evidence. Anyone who wants to add their project can **fill in an online form** which is then sent directly to the research team who can then add the project to the database.

DATABASE - Feedback

We would appreciate your feedback and suggestions for improvements. Please fill in an online form found at the database web address above.

KEY MESSAGES – Barriers and opportunities for improving implementation of measures:

The database contains projects looking at deepening our understanding of barriers and opportunities for improving implementation of measures to mitigate water problems, behaviours influencing uptake of measures, and stakeholder's perceptions of measures.

The key messages from this analysis are summarised below:

- Financial aspects are a critical barrier for implementing water quality measures but it is not all about money. Access to funds and condition of funding, complexity and paper work, time and labour are important
- Cultural and social barriers are also important, for example, resistance to change, differing world views from different stakeholders, lack of perception of the source of problem, etc
- Farmer to farmer communication and community engagement is important to promote cultural changes
- Lack of scientific evidence on the effectiveness of measures, time lags and scepticism is also a major problem. Demonstration farms can be useful to help mitigating this
- There is a clear need for advice to help with the uptake of the measures. This advice should be easy to access, systematic, and preferably one to one. Focus farms can help with this
- Consistency across regulations and throughout time is very important
- Support for initiatives needs to be promoted/facilitated by locally trusted facilitator and organisations.

KEY MESSAGES – Behaviours influencing uptake of measures:

- The highest adoption of measures from the Scottish Rural Development Programme (SRDP) of 2007-2013 (1,000 to 2,500 schemes) corresponds to low input grassland, watermargins, wetland and woodland creation; and field margins. These are measures that can help deliver desired outcomes only under certain conditions:
    - The adoption of measures that always deliver desired outputs is lower and includes mostly manure/ slurry storage (450 schemes), nutrient management plans (43 schemes), and arable conversion to grassland (24 schemes)
- Farmers' behaviour and attitudes towards uptake is conditioned by a business and profitability focus. Other factors are also important such as:
    - Complexity in access funding and paperwork
    - Time and labour. The most successful measures are those which do not impede production (for example, implementation of field margins). Even win-win solutions are not a good solution if they are too difficult to implement
    - Farm business characteristics (i.e larger farms may find it easier to implement certain measures)
- But profitability does not explain it all:
    - Farmers do not always see themselves as responsible for environmental problems (although it is felt that awareness is rising)
    - Cultural aspects (resistance to change) and personal characteristics (age, skills) affect land manager's levels of awareness and proactivity
    - Existing social networks, locally trusted agents/partnerships and farmer to farmer communication favour uptake
- Farmers are often exposed to mixed messages and inconsistencies across regulations over time. This generates skepticism and lower proactivity
- Negative perceptions do not necessarily mean less action ('resistant' stakeholders can show proactive advice seeking can result in more adoption of voluntary measures)
    - Uptake is mostly determined by: ease of implementation; attractive payments and presence of active agents/social networks.

KEY MESSAGES – Stakeholder's perceptions of measures:

- Implementation of measures to improve water quality are generally perceived as (cost) effective. Other measures, such as wetland management and the implementation of filter fences to mitigate field erosion are seen to have potential but with low practicality in their current form
- A lack of clarity exists in the perception of the effectiveness of most measures to improve water quality. A need exists to increase the knowledge of effectiveness of measures and communicate it to stakeholders and land managers
- The regional approach to NVZ has led to a feeling of victimisation among farmers. Research shows that there are different attitudes from land managers ('multifunctionalists', 'resistants', and 'apathists')
- Awareness about SRDP measures is not widespread. The SRDP is seen as promising and with potential to deliver multiple benefits but there is a feeling that measures implemented as part of the SRDP have not delivered much yet. The capacity of SRDP measures to deliver targets are conditioned by:
    - Complexity and burden of paper work
    - Scale and spread of implementation. There a perception that there is a mismatch between where the money is being spent and the areas of higher environmental value
    - Regionalisation, local targeting and increased flexibility are generally seen as necessary
- There is a general perception that:
    - Further evidence, advice, aftercare and monitoring, and awareness raising is needed
    - A move towards output-based approaches may enhance the potential of measures to improve water quality and deliver multiple benefits.

CONCLUSION – Key messages and knowledge gaps:

This review work has allowed us to identify a number of key messages emerging from existing research. A lot is already known about causes/ factors influencing implementation/uptake. Questions relate now to action – we now know about the 'why', we need to move to the 'how'.

Knowledge gaps currently include:

- How can consistency across regulations and over time be increased to prevent mixed messages and scepticism?
- How can the effect of a lack of scientific knowledge and uncertainty of uptake be reduced?
- How can flexibility, local targeting, practicality and output-based approaches be introduced into programmes?
- How to simplify and facilitate access and reduce complexity of SRDP measures?
- How can the uptake of SRDP measures be enhanced in areas of higher environmental value?
- Characterisation of specific measures in terms of the factors identified as having an influence in uptake (to induce change): e.g. time and labour requirements
- How has the awareness of diffuse pollution measures changed over time and what changes in management/behaviour have resulted?

REFERENCE:
Martin-Ortega, J. and Holstead, K. (2013). Improving implementation and increasing uptake of measures to improve water quality in Scotland. Scottish Government Rural Affairs and the Environment Portfolio Strategic Research Programme 2011-2016 (Theme 2, WP2.3. Effectiveness of measures to manage water quality).
www.hutton.ac.uk/guidance-to-improve-water-quality

CONTACT DETAILS:

For more information or to include your project on the online system, contact us:
Julia-Martin-Ortega@hutton.ac.uk or **Kirsty.Holstead@hutton.ac.uk**