

## iCASP Response to Defra Environmental Land Management: policy discussion

July 2020

### **Do you have any comments on the design principles on page 14? Are they the right ones? Are there any missing?**

The design principles focus on achieving environmental outcomes. This needs to be supported by sufficient monitoring and reporting to ensure the scheme maximises value for the tax payer. However, iCASP's [Public goods – soil health project](#) found that there is a lack of data available on soils which are arguably the single most important component of the natural environment. Given this lack of data on how different interventions lead to an improvement in soil health and delivery of multiple public goods, we agree with the principles of providing a wide range of options within ELM, and building flexibility into the scheme so that activities can be reviewed, added or removed as more robust evidence becomes available.

It is important that farmers wishing to trial new combinations of land management to deliver improvements in soil health should be supported. There is an urgent need to develop the evidence base for on-farm approaches that are feasible for maintaining and improving soil health for the delivery of public goods.

Codes of good practice should be made part of ELM, such as the recent Defra Code of Good Agricultural Practice for Reducing Ammonia Emissions, which provides simple, evidence-based ways to reduce ammonia emissions.

We also suggest that it is critical that current/future research is done with a range of stakeholders, including farmers, land managers and academics, to enable immediate use in informing the new ELM.

To ensure efficiency and value for money there is a need for critical assessment of the ability of different interventions to **deliver multiple public goods**. This information is currently lacking in the literature and urgently needed. The same mitigation option will not result in the same impact everywhere due to variations in soil type, climate, crop rotation, fertilizer application and land management practices. Sometimes, although we may see an improvement in one targeted public good, the same intervention may result in the deterioration of another public good. As far as results and indicators such as soil are concerned we need to be realistic about time frames, as many soil health indicators take time to respond to changes in land management. For example, benefits of conservation tillage, land-use change to woodlands and agroforestry may take many years to become apparent.

While design principle 'd' alludes to collaboration, collective action needs to be promoted much more strongly and incentivised so that catchment scale solutions can be implemented to avoid fragmentation and to ensure more than just field interventions take place.

Comments relating to specific design principles:

Design principle 'd': iCASP and the University of Leeds' work on the BESTMAP project suggests there should also be consideration for these actions to reflect the different environmental and climatic contexts throughout the UK. Many farmers have complained that the measures are often prescribed based upon southern areas in term of species recommendations and timing of operations.

Design principle 'g': from our work with farmers, informal feedback is that digitisation of the process is unpopular. Ideally farmers should receive support in the scheme application/implementation (see also response to question 14). Accessible advisory support may be essential to involve smaller holdings. We suggest that Magic Maps is ground truthed in order for farmers to have confidence in new technology.

### **Do you think the ELM scheme as currently proposed will deliver each of the objectives on page 8?**

The objectives are laudable and are likely to succeed if they are delivered within a framework that encourages:

- a. a change in attitude and valuation of the farmed environment / natural capital by land owners and policy makers, and
- b. a high bar so that poor or mediocre behaviour isn't rewarded. There should be a minimum level at which farmers should be expected to operate, above this payments are made for enhancements.
- c. recognition that longer-term timescales are needed for many environmental processes. While quick wins should be identified and encouraged, there should be a longer-term strategy that covers much longer timescales

Findings from our [Integrated Nitrogen Management](#) project suggests that a whole-farm strategy is needed to:

- a. Avoid pollution swapping, e.g. less NH<sub>3</sub> or N<sub>2</sub>O emissions to the atmosphere but more NO<sub>3</sub> leaching to water bodies,
- b. Avoid conserving losses in one location for them to be released later in another location (no overall gain), and
- c. Integrate with other policies and goals, e.g. reduction in greenhouse gas emissions from farming

### **What is the best way to encourage participation in ELM? What are the key barriers to participation, and how do we tackle them?**

ELM schemes should appear as feasible options to land managers both in terms of their implementation and also in terms of their economic return. Suggested payments of income foregone and costs incurred might only be enough for some land managers to "break even" and not allow them long-term financial independence. For example, in the area that iCASP is operating and liaising with farmers and land managers, upland beef and sheep farmers' main income comes from payment schemes. In some cases, 90% of their total income is from Countryside Stewardship schemes but this does not ensure long-term economic viability or their ability to provide economic benefits in the long

term. Instead it makes them economically dependent upon schemes which in turn might influence decisions relating to environmental management.

Our work with Countryside Stewardship Facilitation Fund (CSFF) advisors through the [CONSOLE project](#) has revealed that networks of farmers and farm advisors are central to encouraging new ideas and uptake of options. The CSFF advisors have demonstrated how payment schemes that are developed and owned by a collective of farmers, landowners and managers around a common theme can have a high degree of participation and uptake. Peer pressure is then a powerful tool in encouraging additional participants to the scheme. Advisors who are seen as independent and also from a farming background carry more influence.

Bureaucracy and paper work is also often seen as a barrier to uptake; the option of a facilitator and/or a support network of land owners within a similar scheme can provide the support and catalyst that is needed.

Ensuring greater flexibility in the implementation of the schemes would make them more attractive to many farmers.

Several findings from our [Payment for Outcomes](#) project may also shed some light on encouraging participation in ELM; for example farmers want to know whether and how interventions are going to work to improve the environment before committing to them. Evidence from the Test and Trials and the ELM pilot will be critical in supporting farmers to understand interventions and build their commitment. Sharing information about interventions, their barriers, opportunities and benefits, and their mechanisms of working can also help with this. There is also a concern from some about what is involved and who will benefit most – very often the first-movers do not benefit most but those who hold back and wait for extra incentives, higher payments or security incur greater benefits. For some, changes in land use could affect current schemes or BPS payments thus delaying someone's entry into trials or early stages of ELM.

Consistent messaging across different policies and regulating agencies is needed, to help farmers understand that there is scientific uncertainty and that we need to put in place 'no regret' options.

Some of the current work being undertaken by iCASP regards the attitude and valuation of the farmed environment and explicitly targets farmers and land managers across the UK. We have the intention and funding available to carry out a UK-wide survey of farmers regarding the amount of monetary compensation they are willing to accept in order to participate in ELM schemes, referring to the current layout of the 3 tiers. This survey will target a large and representative sample of UK farmers and land managers and plans to collect information regarding farmers' previous experience with agri-environment schemes, current and past farm practices, levels of environmental awareness and beliefs, and key socio-demographic characteristics. This survey is being prepared and will be rolled out between October and December 2020.

iCASP's expertise allows for such an interdisciplinary approach to farmers and land managers' preferences for compensation and acceptability of the ELM scheme as it includes academics from natural sciences (Prof. Joe Holden), geography (Prof. Guy Ziv), soil sciences (Prof. Pippa Chapman) and social sciences (Prof. Julia Martin-Ortega). We consider this research to be part of the science base that could inform the ELM pilot. Outputs of our survey could directly inform payment levels for different schemes, sourced directly from UK-wide respondents, that could be used in the pilots or when drafting payments for different tier levels. For more information on this and how it could be used to inform ELM pilots and the roll-out, please contact [Prof. Julia Martin-Ortega](#).

---

**For each tier we have given a broad indication of what types of activities could be paid for. Are we focussing on the right types of activity in each tier?**

The absence of any monitoring requirements for tier 1 might result in farmers committing to introduce environmentally sustainable practices into their businesses but their success will be unknown. Therefore, it is important that evidence is collected to show impact of activities on delivery of public goods in different locations and farm types. Unless clear entry requirements and “levels” within tier 1 exist, farmers may not be incentivised to provide more than the bare minimum. iCASP’s research and interaction with farmers in the wider Yorkshire region, who are also members of regional CSFF groups, show that these farmers have committed to providing several environmental benefits in their CSFF group applications but whether these benefits are achieved, and over what time frame, is as yet unclear given the lack of monitoring and baselines established.

**Delivering environmental outcomes across multiple land holdings will in some cases be critical. For example, for establishing wildlife corridors or improving water quality in a catchment. What support do land managers need to work together within ELM, especially in tiers 2 and 3?**

From various workshops and expert interviews that iCASP has held with Yorkshire farmers over the last few years there is some consensus that working together with other farmers can be risky given the varying levels of engagement and participation of some farmers in collaborative projects. Farmers in those meetings appeared more willing to work alone to ensure that there were no negative impacts from non-compliant farmer collaborators. Therefore, co-operation needs to go beyond land being adjacent and the number of farmers involved. To ensure homogeneous participation from all farmers within groups enough tangible incentives need to be given to farmers. There also has to be a clear definition of responsibilities within groups (for example; many farmers were concerned about having to share penalties if one of them did something wrong or was not up to the task).

Farmers working together in an area should not be penalised if one or two farmers in the immediate vicinity do not want to participate. From working with the CSFFs we understand that farmers often opt into these groups at a later date and the same may be true for options in tier 2 and 3. Therefore, there should be options available for farmers to join groups of farmers carrying out environmental outcomes across a region in tier 2 and 3 at a later date in order to gain best outcomes for the environment. Farmers learn from each other and often need time to commit to a major change in land use.

Our work with Yorkshire farmers also suggests that demonstration farms may have a role to play within existing farmer networks. Funds to develop collaborative initiatives may also help in building trust and networks – something similar to what currently happens with the CSFFs.

Through our work developing two Communities of Practice (CoP), we also suggest this could be a way of supporting the building of networks and increasing knowledge and skills whilst sharing best practice.

The iCASP project entitled [Don Catchment: Hidden Heritage Secret Streams](#), used opportunity mapping to assess whether interventions could be used not only to help slow the flow, but also to decrease diffuse pollution and increase landscape connectivity. Each possible intervention was given a score out of 3 to enable the Don Catchment Rivers Trust to prioritise their efforts. This project highlighted that a range of open source data and GIS plugins can be used to produce opportunity



maps which are vital in supporting land managers as this enables them to prioritise locations to focus on. Land managers are vital in the ground-truthing step which is a critical part of the opportunity mapping process. When looking at landscape connectivity interventions may need to be optimised in a different way than solely focusing on flow. For example, different species may be needed in a buffer strip and therefore a hierarchy of the main desired outcome(s) should be decided. Support is required to ensure that the interventions are optimised in order to reach their desired outcomes.

**While contributing to national environmental targets (such as climate change mitigation) is important, ELM should also help to deliver local environmental priorities, such as in relation to flooding or public access. How should local priorities be determined?**

There are already statutory bodies that could pick up this role – these are the Local Nature Partnerships (LNP). These boards typically include a wide stakeholder representation and have in many cases already been developing local environmental priorities including consideration of issues such as flooding and natural flood management outcomes, water quality, biodiversity, health and wellbeing, air quality, peatland restoration etc, and overarching green and blue infrastructure strategies. Therefore we recommend funding is provided to the LNPs to provide staff who can support the local ELM prioritisation activity and local delivery.

As mentioned previously, Communities of Practice can play a valuable role; LNPs could help with forming and supporting the ongoing running of these CoPs.

**What is the best method for calculating payments rates for each tier, taking into account the need to balance delivering value for money, providing a fair payment to land managers, and maximising environmental benefit?**

Currently, as ELM are being defined, a clear association exists with the size of land under “environmental management” and tier ranking, which might also reflect payment levels. This doesn’t seem to take into account the environmental quality of benefits provided by relatively smaller land holdings. If prices are chosen to reflect the quality of the services more than the extent of area they are implemented within, this may incentivise land managers with small holdings to take part in higher tiers. For example, upland farmers in the Yorkshire region have relatively small holdings and are therefore more likely to participate in tier 1 than 2 and 3. However, several of these farmers have been members of CSFF groups which have targeted larger environmental improvements at the catchment scale rather than the farm scale, but a lack of proper compensation of their current efforts might restrict them to apply only for tier 1 agreements.

For the livestock sector the payment from ELM has to replace their basic payment in order for them to survive, otherwise a large proportion will go out of business, or the price of the raw product will have to increase. Payment cannot be based on the old system of profit forgone as you are providing an income for the provision of a public good, which some farmers may have already been doing and others not. So it is important that existing good practices are rewarded above those that are just starting to deliver improvement in a specific public good.



Different public goods are delivered best at different scales so tier 1 options should not be seen as inferior to options in tier 2 and 3 and thus receive lower payments. For example, if you want to improve air quality by reducing ammonia emissions (as we are through the iCASP [INMY Farm](#) project) then this is best achieved at the farm scale though livestock, manure and fertiliser management in tier 1; whereas creation of a major woodland is more likely to include several land owners and be in tier 3. However, some options outlined in tier 3 such as peatland restoration may actually only include one landowner as upland estates, where the majority of blanket peat exists, are extremely large (10-20, 000 acres) compared to family dairy farms of 100-300 acres.

### **To what extent might there be opportunities to blend public with private finance for each of the 3 tiers?**

Applying blended finance for all three tiers can, depending on the reason for private involvement, require higher monitoring quality of environmental goals. In the case of private financing, private capital acquisition would require robust evidence on achieved outcomes. If land managers are not able to clearly define baseline measurements of environmental benefits (for example, carbon stored in soils, existing water quality levels etc.), and achieved improvements, funders will be less inclined to commit funds to such projects. If private finance is to be encouraged, farmers need to also receive support for monitoring to establish baselines for the application phase. This should encourage the use of blended finance in all tiers, potentially with some cost-efficiency taking place for individual farmers (for example, water quality baselines for a small area of a river catchment can refer to multiple farmers which then, in turn, can individually apply for a tier 1 scheme). However, caution is needed when relating options at any scale to improvements in water quality at the catchment outlet as agriculture is not the sole source of pollutants to streams and rivers. For example, septic tanks and waste water treatment plants contribute phosphorus to stream and rivers.

From the [Resilient Dairy Landscape](#) project (funded by Global Food security programme) farmers are engaging with privately funded agri-environmental schemes as they provide stability and resilience to farm businesses and farmers prefer its simplicity, flexibility and ease of planning and reporting compared to public agri-environment scheme. Also dairy farmers feel that in the current CS scheme there are not enough viable options for them to engage with and the majority of options are for arable farmers. So ELM needs to ensure that there are plenty of options for dairy, livestock and arable farms.

### **As we talk to land managers, and look back on what has worked from previous schemes, it is clear that access to an adviser is highly important to successful environmental schemes. Is advice always needed? When is advice most likely to be needed by a scheme participant?**

From iCASP's discussions and work with farmers and land managers it has become evident that help is most needed in the application phase which can be intimidating and burdensome to some.

Land managers' ability to receive expert advice and the help and input of a farm adviser has long been assumed to be a catalyst for delivering environmental benefits. Land managers have been found to perceive enrolling to a scheme more feasible if advisory support is available (Emery and Franks, 2012). Nevertheless, this relationship appears to be more complicated than initially thought. Case studies from the literature point to conflicts between land managers and farm advisers when scheme requirements are too complicated and when there is no clarity for the requirements of the



scheme (Hejnowicz et al., 2016). Our own experience, outlined below, also confirms there is not simple answer on this issue of provision of advice

A qualitative analysis carried out by iCASP of members of 5 distinct Community Stewardship Facilitation Fund (CSFF) groups in Yorkshire revealed that farmers and CSFF facilitators alike didn't see advisory support as a necessary or helpful requirement for them to take part in an environmental scheme. Instead, they were more inclined to think that advisory support was not required and considered prior experience and schemes with simple characteristics as more important factors in them enrolling in a scheme. However it is important to note that these respondents had prior experience with simple environmental schemes (e.g. ELS) and high-quality schemes alike (e.g. HLS) and included land managers with both large and small land holdings. Their experience of collaborating with other land managers within their respective CSFF groups in the region gives them a good understanding of matters of cooperation. The same participants acknowledged the important role the CSFF facilitator plays in ensuring that CSFF members' goals and activities are aligned with that of the whole group.

From interviews with farmers in the BESTMAP project, farmers said advice from advisors was essential for them to engage and apply for agri-environment schemes. Therefore it is essential that when ELMs goes live that there are enough well trained advisors to respond to farmers enquires about ELMs and promote it actively via farmer networks and 1 to 1 visits.

It is possible that well-established networks of farmers and foresters can substitute some of the services provided by professional farm advisors with peer-to-peer learning, but this discriminates against those farmers who do not have or cannot enter such networks.

Overall, adviser support should increase the likelihood of land managers successfully delivering environmental benefits when cooperation between them is required by the scheme, but these benefits should not easily be assumed to apply for less participatory schemes. As land managers move away from individual approaches to land management they would need guidance in order to better understand the goals of a scheme and facilitate co-operation and dialogue between land managers, especially given the current design of ELM's tiers 2 and 3.

Advice is needed where the recommended practice involves the use of a new technology of tool, or where new evidence suggests current practices are counterproductive – this is especially important where the current practices are based upon 'social norms' or beliefs. From work carried out to produce a policy report for DAERA, older farmers were found to be more reluctant to try a new technology or tool because of "perceived sophistication of the recommended tools/technology" (Okumah et al., 2019)

If we are seeking behavioural change from farmers, then we need to put in place measures that support this. We note that "...while information provision is important, farmers need to actively engage in and be able to reflect on the practice for it to lead to behavioural changes. The role of experiential learning also suggests the need to move from the predominant model of a unidirectional relationship (the notion that the relationship always starts from awareness to behaviour), to a bidirectional one (i.e. from behaviour to awareness)" (Okumah et al., 2020)

---

**We do not want the monitoring of ELM agreements to feel burdensome to land managers, but we will need some information that shows what's being done in fulfilling the ELM agreement. This would build on any remote sensing, satellite imagery and site visits we deploy. How might self-assessment work? What methods or tools, for example photographs, might be used to enable an agreement holder to be able to demonstrate that they're doing what they signed up to do?**

A range of farmer led monitoring techniques have been identified through several iCASP projects. These range from mapping and measuring to photographing the outcomes of interventions. It is important that ELM considers the level of data required to release funds; more in depth data can be collected using techniques used by universities, laboratories and practitioners. It is also harder to prescribe banded payments to qualitative data.

The Moors for the Future Partnership (MFFP), the Yorkshire Peat Partnership (YPP) and the University of Leeds have developed a [user guide for peatland restoration practitioners](#) and others interested in peatlands to help value the socio-economic benefits of restoration. The User Guide provides a simple description of the methods for valuing the benefits provided by peatlands and how to apply them in practice. It also helps with communicating the social value of peatlands to the public and policy makers

Sensory imagery works only if combined with field visits, as farmers we talked to on the BESTMAP project complained that they had difficulties arguing with (allegedly) false claims from GIS operators and/or with getting approval for specific options even if they had photographic proof of their feasibility (for example, applications for bird conservation options with photographic proof of the presence of a bird species in habitats that were not considered "optimal").

There does need to be caution with self-assessment as there does with self-regulation which has been shown to not always work. It is important that regulatory bodies continue with site visits which also help to identify cross compliance issues such as pollution control, animal husbandry etc. and information can be shared between organisations as appropriate to improve other aspects of farm best practice. Reducing the number of site visits also reduces the visibility of officers and their respective organisations, and opportunities for trusted relationships to form can be missed. This in turn can create a challenge for setting up important habitat or landscape scale projects. On-site regulation and assessment cannot be replaced entirely.

With regards to reducing flood risk, the impacts of interventions on channelised flow are more important than sheet flow; so photographing a reduction in gullying etc. is more important to capture. Simple measurements such as volume of water or sediment stored can be carried out by farmers without becoming too cumbersome. Interventions that affect soil metrics, can be monitored using soil infiltration tests or proxy measurements such as soil colour etc. It is important to note that interventions that affect soil properties, may take time to become apparent, whereas those in water such as leaky dams or offline ponds have immediate measurable impacts.

Monitoring should try to cover a range of flow conditions in order to see how the intervention is performing under different return periods. Site walkovers can provide useful monitoring information and could form a simple checklist of observations. After a storm event, for which a threshold is set, a site walkover could be used to look at evidence of the extent of channel flow using, for example, trash lines and evidence of erosion such as locations and severity of erosion, including any new channelised flow locations. This information can be used to understand how the



intervention is functioning in different flow conditions. During the walkover, the conditions of the intervention such as storm damage for example, should be recorded.

Drawing upon the work of several iCASP project, we have [identified what farmers and landmanagers/owners could monitor to provide evidence](#) of the outcomes of different natural flood management interventions on a land holding. This is not an exhaustive list but considers the monitoring within a valuation framework and some of the considerations needed for a payment scheme.

Pilots of “farmer’s science” could be trialled to look at what might be feasible for farmers to monitor, this would resonate with the notions of experiential learning as mentioned previously. Technology like apps and drones could be deployed as part of this.

Self-assessment could be farmers uploading photos to a web site, this is used by Nestle in their milk premium scheme in Cumbria (Resilient Landscape project). Farmers comment on the simplicity, flexibility and ease of reporting compared to public agri-environment schemes.

Remote Sensing and drone footage need to be ground truthed otherwise a lack of confidence in monitoring will occur among farmers.

### **Do you agree with the proposed approach to the National Pilot? What are the key elements of ELM that you think we should test during the Pilot?**

Yes, however it needs to involve a wide range of farmers, foresters and other land managers from across the different regions of England, as well as a range of farm types (upland/lowland/arable/livestock/diary) and others such as woodland managers, and NGO groups that are likely to provide the advice to farmers. It is essential that feedback from farmers (owners, tenants, managers and agents) and stakeholders is used to continually iterate and improve the scheme design. This should also be done once ELM is introduced.

The national pilot needs to be based on the best available evidence and should ideally be delivered through co-constructed mechanisms to ensure engagement and buy-in.

Please also see our response to question 8 and our UK-wide survey that could be used to help with piloting ELM.

### **References**

Emery, S. B., & Franks, J. R. (2012). The potential for collaborative agri-environment schemes in England: Can a well-designed collaborative approach address farmers’ concerns with current schemes?. *Journal of Rural Studies*, 28(3), 218-231.

Hejnowicz, A. P., Rudd, M. A., & White, P. C. (2016). A survey exploring private farm advisor perspectives of agri-environment schemes: The case of England’s Environmental Stewardship programme. *Land Use Policy*, 55, 240-256.

Okumah M et al (2019) Behavioural impacts of Northern Ireland’s Funded Soil Sampling and Training Schemes 2017-2018 (policy report for DAERA, not yet available online)

Okumah, M et al (2020) The role of experiential learning in the adoption of best land management practices. *Land Use Policy*. (under review).