Environmental Land Management Scheme

Dartmoor Test & Trial

Final Report

December 2021

Produced for the Dartmoor National Park Authority
Harriet Bell, Environmental Land Management Officer

Contents

Executive summary

The Dartmoor Test and Trial (T&T) began in January 2020 and ended on the 1st December 2021.

The methodology adopted to address the objectives was predicated on co-production; ensuring engagement with an informed farming and landowning community. Farmers' participation was enabled and encouraged throughout the T&T.

Dartmoor farmers have considerable experience of agri-environment (AE) schemes and innovations over the last 40 years and have a lot to offer. They are a valuable resource. The T&T is a logical step following a number of local initiatives to improve delivery of environmental change and improvement including, The Dartmoor Moorland Vision published in 2006, establishment of the Dartmoor Hill Farm Project (DHFP) in 2004 and Dartmoor Farming Futures (trial commenced in 2010 and on-going). The learning from these initiatives has informed the T&T.

Common Land; addressing the unique aspects of managing common land

Dartmoor is an area of upland with livestock farming dominating. Most of the 900 farms have rights to graze livestock on areas of **common land,** although today there are about 200 active graziers, (53% of farmers participating in this study use common land). The common land is an important area for a range of public goods including water, carbon storage, public access and the natural and historic environment. The positive management of the commons is critical to deliver the benefits from these public goods.

The T&T has ensured that the management of common land has been considered throughout the work to secure its **four objectives**:

1. Develop a blueprint for land management plans with a specific focus on commons
2. Develop and trial a 'payment by results' approach that could operate on commons as well as 'home' farms
3. Explore how private finance and other forms of environmental net gain could be incorporated into ELMS at a local level
4. Explore the role that National Park Authorities can play in shaping, facilitating and delivering ELMS

The T&T developed and accessed innovations to address the objectives, including:

- **The SWEEP map**; a satellite mapping system, developed by the South West Partnership for Environmental & Economic Prosperity (SWEEP), to provide a UKHab habitat map of Dartmoor, (Objective 1).

- **A Scorecard** to be used in conjunction with a map and advice, to deliver an outcome focussed land management plan for home farms and commons. Attributing values to land management is complex but a start was made on valuing public goods and the costs of delivering those benefits.(Objective 1 and 2).
- **Blended finance model** developed with the Postbridge Cluster Group (farm cluster) working with potential funders/providers to explore opportunities for funding related to the delivery of public goods, (Objective 3).
- A draft **Commons delivery model** after commoners identified barriers and opportunities to improve delivery on common land including management plans, the value of a local vision, annual work plans and the need for guidance on income distribution, (Objective 1).

Key findings

1. **Outcomes.** Base line survey of farmers with experience of AE schemes found satisfaction levels were higher with home farms agreements (71%) as opposed to a positive satisfaction level of 40% for commons' agreements. Inappropriate prescriptions were identified as an issue suggesting an outcome approach would be more acceptable. An outcomes-based approach where farmers can self-select their own performance targets and methods of delivery was considered important during the development of a score-card, (additional information in ref. 1 & 2).
2. **Support for 'payment by results'.** The baseline survey highlighted a positive attitude to payment by results, with 52% of the 28 participants agreeing or strongly agreeing that the approach is fair and that they believed it would enable them to deliver better results. The same question asked of commoners resulted in a slightly lower figure (48%). A scorecard was designed to enable the rewarding of successful land management; the higher the score achieved the higher the payment the farmer receives. The design included valuing public goods already being delivered, whilst incentivising enhancement. The scorecard was identified as a suitable vehicle for delivery of both national and local spatial priorities. This payment approach was supported by all three of the commons participating in this T&T.
3. **Land Management Plans**. Management plans on their own were not considered to offer sufficient evidence and support to enable agreements to be constructed and outcomes identified. Three alternative options were considered; site specific advice from an advisor, a mapping tool made available to farmers to populate and a score-card enabling farmers to select outcomes and level of participation. A combination of all 3 options was supported by 100% of the farmers surveyed (28) and the three participating commons.

4. **Facilitation and Advice; critical components for change.** The provision of advice and the availability of facilitation have been identified as important components to successful delivery; especially within potentially complex commons agreements and when addressing potential blended finance opportunities. All the relevant consultations identified that facilitation is particularly important for group working and fostering collaboration. It can however be valuable to individuals including guiding to specialist advice. Several of the potential funders identified the support of an independent facilitator as essential to the development of opportunities for private funding to deliver ecosystem payments. Facilitation alone was not sufficient. Each group articulated that facilitators needed to operate within a clear framework. On common land this framework was a process for agreeing a vision, providing annual work plans that identify the role of individuals in delivering the agreement and a template for the division of income within a commons agreement. This model was widely supported but requires further development.

5. **Blended finance;** the workshops failed to identify a preferred framework for securing funding for ecosystem services. Both funders and farmers identified the lack of a clear framework from government as problematic. Ideas from the workshop included allocating private finance to capital works or having the option on your ELM application to opt in or out of selling environmental credits directly to Defra.

6. **A Place-based Approach;** the importance of understanding and appreciating local factors and the local landscape were consistently identified as critical to delivery. Dartmoor was identified as the appropriate scale for spatial priority setting. It was recognised that a hard boundary could potentially create difficulties for holdings which spread across the boundary, including common land.

   The roles of National Parks in setting priorities and delivery were explored. There was some support for convening a new stakeholders' group to set spatial priorities, similar to the ambition of the National Park management plan process. Just over half, (52%), of the 25 farmers and landowners consulted had participated in the consultation for the the current National Park plan but there appears to be a dis-connect between the park plan and farming delivery.

   The DNPA was considered to be unsuitable as an organisation to deliver advice by 28% of the farmers participating in the baseline survey. The Dartmoor Hill Farm Project, established by the DNPA, Duchy of Cornwall and the farming community in response to the impact of Foot and Mouth (FMD) (see ref. 3), was identified as the preferred provider of advice in both the baseline survey (86%) and by 70% of the 17 farmers developing the scorecard.

7. **Co-Production with Farmers and Landowners.** There is considerable evidence that farmers and landowners want to be co-producers and that this engagement engenders a sense of ownership, secures a longer term commitment and results in improved delivery. However such engagement comes with risks and requires commitment from all parties. This is one of the key findings of the review commissioned by this T&T into the Dartmoor Farming Futures initiative, (more information in ref. 1 & 2).

Abbreviations, Acronyms and Definitions used in the text

AE agri-environment usually used in relation to AE schemes.

EA Environment Agency

ELM Environmental Land Management – the new farm support scheme being developed by Defra

DaCC Dartmoor Commoners' Council

DCOA Dartmoor Commoner Owners' Association

Defra Department for environment, food and rural affairs

DHFP Dartmoor Hill Farm Project, and now funded by the Duchy, DNPA and Prince's Countryside Fund

DNPA Dartmoor National Park Authority

DFF Dartmoor Farming Futures

Duchy Duchy of Cornwall

Ha Hectares

HLS Higher Level Stewardship, a tier with Environmental Stewardship agri-environment scheme

LFA Less Favoured Area, mountain and uplands requiring support.

NE Natural England

RBAPS Results Based Agri-environment Payment Schemes in Europe

SSSI Site of Special Scientific Interest

SWEEP South West Partnership for Environmental and Economic Prosperity

T&T Test & Trials

Definition

Co-design: A design approach that actively involves users and stakeholders from the beginning of a project, right through to roll-out.

Co-production: A system of policy delivery which moves away from a consumer model of public service, where professionals design a system to generate their preferred outcome, towards use of strong social networks and good relationships between stakeholders and government to deliver policy objectives over time. Such an approach ensures all parties involved contribute the knowledge and skills in their possession for collaborative delivery of the best outcome.

1. Introduction

The Dartmoor Test & Trial is a Defra funded initiative, one of the tests and trials intended to inform the development of the new Environmental Land Management scheme (ELMs).

The DNPA in partnership with other stakeholders developed the objectives of the T&T.

Dartmoor is an upland in south-west England. The Dartmoor National Park covers 95,312 ha. of which 66% is open moorland. A significant area of the moorland is common land covering 35,882 ha. Woodland and forestry cover 11% of the National Park area. The remaining farm land is comprised of enclosed fields. The dominant type of farming is livestock farming (c40% cattle and 60% sheep) with a predominance of small family run farms of which over half are tenanted. These LFA farms rely heavily on support from BPS and agri-environment payments. (Ref. 4).

The common land is subdivided into 86 land units, managed by 38 commons associations. The Dartmoor Commoners' Council, established by the Dartmoor Commons Act of 1985 oversees animal health issues on the commons and the administration of common rights. All the common land is privately owned and the Dartmoor Common Owners' Association represents the owners. The commons are grazed by cattle, sheep and ponies. The majority of the commons are in AE agreements (usually HLS).

There is a range of priority habitats on Dartmoor, many of national and international importance, including blanket bog, peat, upland heath, rhos pasture, hay meadows, broadleaf woodland, lowland heath, acid grassland and the iconic granite tors. Dartmoor is of international importance for its historic environment; including archaeological sites, from pre-historic burial mounds to more recent industrial features. There is also an impressive cultural heritage often related to commoning.

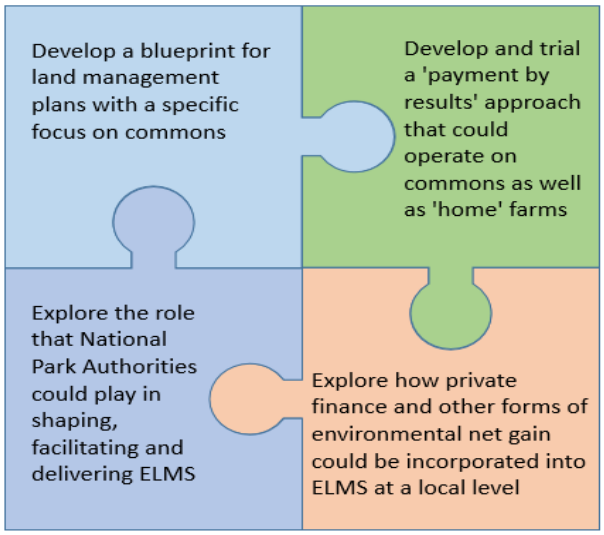
The public has legal right of access on foot to 50,000ha of Dartmoor, there are additional 450 miles of public rights of way, and the area is visited by 2.3 million people a year. An area of Dartmoor's moorland is also used by the Ministry of Defence as a training ground.

The concept of paying farmers to deliver environmental benefits has a long history on Dartmoor. Prior to the first national agri-environment scheme, the Environmentally Sensitive Area (ESA), becoming available to Dartmoor farmers and commons associations in 1994, management agreements had been offered to farmers by the DNPA. These agreements, enabled in 1981 by the Wildlife and Countryside Act eventually covered some 5,262 ha. and were the forerunners to all further AE in the UK. Take-up of the various AE schemes has been high in P the past (< 80%) but today only halve of all the commons remain in AE; (19 covering 20,000 ha still in AE in 2021)

Partly as a result of the significant coverage of AE agreements and a farming community that is engaged with communal farming (commoning) farmer led innovations have surfaced often enabled by the main stakeholders – DNPA, The Duchy of Cornwall and Natural England.

This Test and Trial addresses four inter-related objectives:

- Develop a blueprint for land management plans with a specific focus on commons.
- Develop and trial a 'payment by results' approach that could operate on commons as well as 'home' farms.
- Explore the role that National Park Authorities could play in shaping, facilitation and delivering ELMS.
- Explore how private finance and other forms of environmental net gain could be incorporated into ELMS at a local level.



The work of the T&T was overseen by a Project Board comprised of representatives from the Dartmoor National Park Authority, Dartmoor Commoners' Council, Dartmoor Hill Farm Project, Dartmoor Common Owners' Association, The Duchy of Cornwall and Natural England with an independent chairman.

The T&T started in January 2020 just prior to the first COVID lockdown in March. The pandemic and restrictions significantly influenced the methods of working; the more usual in person meetings or events were replaced by twice-weekly virtual evening discussions focused on specific issues or ideas. When circumstances permitted, in person events were held, although the autumn lockdown of 2020 once again significantly curtailed this activity.

2. Methodology

The constraints imposed by a pandemic required an innovative approach to communicating with stakeholders and members of the farming community. The more usual on-farm meetings were replaced by on-line meetings and telephone conversations. Some of the participants were unfamiliar with communicating in these ways and this may have had an impact on both the numbers and contributions offered.

The advisory group

An open invitation was extended to all Dartmoor farmers and landowners to contribute to the T&T. From the response an advisory group was formed comprised of 15 farmers, 3 landowners and representatives from the main stakeholders. This was the maximum number easily accommodated when using virtual meetings. The selection ensured a cross section of the farming community; representing different size holdings, from different parts of the Moor, 80% had common rights, 53% are active common graziers, 62% tenant farmers, 28% are farmer land owners, 10% land owners who do not farm and all but one farms in the LFA (one is a lowland farmer). All members had experience of AE schemes and 66% are currently engaged in active agreements (predominately HLS). There is confidence that they were broadly representative of the wider Dartmoor farming community. Some meetings involved members selected for their specific experience and interest whilst other meetings were open to all. These twice-weekly virtual evening discussions formed the core of the consultations with farmers.

Baseline surveys

In order to enable contributions from the wider agricultural community a series of online surveys were conducted using the Dartmoor Hill Farm Project website and by email. This was particularly useful in establishing base-line information and for developing the score-card. The limitations of this approach are its reliance on a degree of technological literacy, raising awareness of the opportunity offered and for stakeholders to be self-motivated to participate. Access to a good internet connection is limited on Dartmoor and may have excluded some farmers from participation.

Workshops

When opportunities allowed four stakeholder workshops were held. Two were aimed at the Dartmoor land management community and participation was approximately 50 individuals. Two were targeted at the Dartmoor’s younger farmers. These workshops were primarily an opportunity for those less comfortable with virtual meetings.

Postal surveys

Two postal surveys were conducted as part of the evaluation of Dartmoor Farming Futures. Surveys were sent to farmers and landowners who participated in the design stage of DFF on both trial sites. Of the 17 farmers contacted 12 (70%) responded. Another survey was sent to most farmers/commoners currently actively farming on the Forest common and participating in the DFF trial. Twenty farmers responded, about 25% of the relevant farmers.

Facilitated Commons workshops

Four Dartmoor Commons were identified to be representative of commons on Dartmoor. The criteria for selection included area of the common, location, current agri-environment agreement status, number of grazing rights holders and land ownership. One common's association (Sheeps Tor) decided not to engage.

The 3 selected commons participating in Test &Trials:

No.	Common	Area	CL number(s)	Quarter	No. active graziers	No. non-active graziers	AE agreement
1	Widecombe	1040 ha.	CL 67,68, 69 &70	East	10	30	no
2	Lydford	568 ha.	CL 96	North	6	8	yes HLS
3	Harford & Ugborough	1730 ha.	CL 156 & 195	South	7	38	yes HLS + extension

A minimum of three facilitated workshops was held with commoners from each of the commons. Data from all three commons was then amalgamated to identify areas of consensus and division of opinion.

One meeting was held between representatives from all three commons to look at payment by results.

Desk based research

A desk review of key documents was undertaken including a review of previous initiatives such as Dartmoor Farming Futures and Our Common Cause (see references).

Commissioned specialists and external expertise

1. **New mapping system:** SWEEP developed a computer algorithm to map habitat using freely available multispectral satellite imaging data (Sentinel 2)

and LiDAR (Tellus SW). Habitat is mapped at 10m resolution and classified into broad habitat types (UKHab level 4). The resulting habitat map for the whole of Dartmoor has overall classification accuracy in the range 65%-75% and is replicated annually to monitor change over time.

2. **Score-card design and development:** Following the decision to develop a scorecard for the delivery of public goods on home farms and commons the Organic Research Centre was contracted to design a score-card. The initial design was then further developed by Dr James Moran, from the Galway Mayo Institute. Dr Moran then populated the scorecard with values that reflected costs of management to provide the structure for applying payment by results (PBR). The development of the values for common land was not completed due to lack of data relating to management costs of farming on common land.

3. **Review of Dartmoor farming Futures:** A review of DFF was commissioned to identify the main lessons learnt from the trials on two commons. The findings included the importance of managing expectation and the critical role of support, (ref. 1)

4. **Natural Capital:** Data and process from work undertaken by Andersons Midlands on behalf of The Duchy of Cornwall to identify and value natural capital on one of the Duchy's farms provided a value asset when calibrating the scorecard.

3. Results and discussion

Land Management Plans

The need to provide some form of structure or plan to guide the delivery of public goods was accepted by all consultees, including the value of a base-line plan that showed existing features. Discussions with the advisory group on developing such plans identified three options:

1. Advice on the farm that generates a plan,

2. Provision of mapped opportunities

3. Score-card identifying priorities and potential outcomes.

The advisory group proposed a combination of all three options. 86% of the 14 farms surveyed during the development of the scorecard also supported combining these three approaches, as were the majority of participants from the three commons. Support for this approach was often related to the potential risk of relying on a single advisor or map. A selection of the farmers' responses is set out in Table 1. The consensus was that combining a scorecard with advice and mapping provides clarity on the outcomes, the potential mechanisms to support improvement whilst providing sufficient flexibility for farmers to have a sense of ownership over the process.

Table 1

Land Management Plan Push Factors	Land Management Plan Pull Factors
Mapping alone is insufficient to support delivery.	Mapping should provide information relating to regional and local spatial priorities to support farmer decision making.
Advice based on control and imposition of outcomes is disempowering.	Advice based on co-delivery and supporting learning builds ambition and confidence.
Systems built on the use of one advisor, where there is high turnover of advisors or lack of advisor provision, create uncertainty and instability.	System structures should be designed with enough clarity around outcomes that land managers are able to use them without relying on external support.
Prescriptive and universal mapping or advice based on regional or national spatial priorities may not translate to the local landscape and can create tension between agreement outcomes and farm business outcomes.	Scorecards enable land managers to identify within a framework of regional and national spatial priorities their own target local priorities and appropriate delivery mechanisms. Decisions can be made based on knowledge specific to the local landscape and farm business.

Land Management Plan Push Factors	Land Management Plan Pull Factors
Funds targeted at delivering prescribed activity often fail to value public goods already present.	Scorecards were perceived as 'fair' in that they recognize and value the presence and condition of existing features.

The advisory group reviewed a selection of scorecards or similar including the Catchment Sensitive Farming model, various European examples from the RBP network and the Savory institute. All were considered to be too complex but elements of each were considered valuable. The Organic Research Centre and the Galway Mayo Institute were commissioned to design the scorecard based on the farmers' comments. Two iterations of a paper-based scorecard were developed and tested with members of the advisory group and other farmers (Appendix 1 and 2). The first iteration had separate scorecards for commons and home farms. The second iteration used the same scorecard template for commons and home farms.

Although the second version was suitable for common land and enclosed land it was made clear that this did not imply that both common land and enclosed land would necessarily be included in the same agreement. It was noted that there was concern relating to the financial liability implied by linking a private home farm agreement, where the farmer has total control, with a collective agreement impacted by the decisions of others.

The scorecards were tested 34 times on 19 home farms. Of the 31 responses to the surveys conducted during the development of the scorecard 55% of the farmers agreed that "this is the right approach for ELM land management plans, the details just needs fine tuning", 35% that "this is heading in the right direction and could be a useful tool for delivering ELM but it needs a lot more work" and only 1 participant felt that "I don't think a scorecard is the right approach for delivering ELM land management plans".

The first scorecard was developed on the hypothesis that negative scoring would not be well received by participants but feedback suggested this was not the case. A survey of those participants testing the second version established that 16 out of 17 participants felt that negative scoring was fair; reasons given included "Having negative scores helps identify where you're going wrong" and that "Points should be taken away for poor delivery".

The second iteration of the scorecard was tested in conjunction with two maps. One map was comprised of existing data on water features, the historic environment and hedgerows. The other was the innovative tool developed by SWEEP (Appendix 3). The map displays the areas of habitats adapted from the national UKHab classification scheme. Despite the limitations of its accuracy 76% of the 17 farms testing the map felt confident to use it to identify habitats, 10 (59%) felt positive about using it to pre-populate scorecard data and 16 (94%) felt it would help monitor

change. However, 100% of respondents felt they'd only want to use maps to pre-populate scorecard data if they could be easily corrected where necessary.

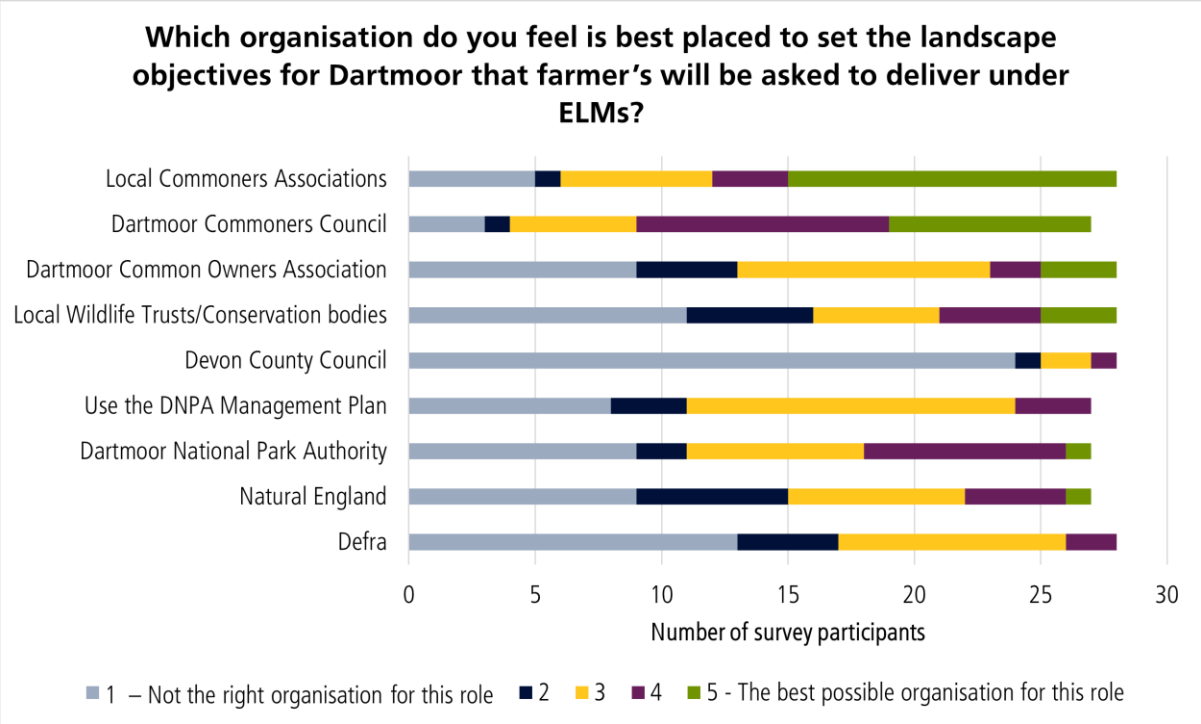
It was noted that many of the farmers engaged in the testing of the scorecard felt that SSSI condition was not a sound indicator. The consensus decision across all parties involved in developing the scorecard was that some of the criteria used to assess SSSI habitats may be relevant, but SSSI favourable condition status (as reported by NE at a SSSI unit scale) was not.

Spatial Prioritization

There was a consensus that Dartmoor was the landscape scale appropriate area for setting spatial priorities. Several different boundaries for Dartmoor were considered including the LFA, commons, the Moorland Line, the national park boundary and the character area. Consensus on exactly which Dartmoor boundary was preferred was never established. It was also stressed that hard boundaries could be problematic for any holding with land on either side.

The baseline survey sought to identify which existing organisations would be suitable for setting the spatial priorities for ELM. 28 stakeholders responded. The results are set out in Table 2.

Table 2

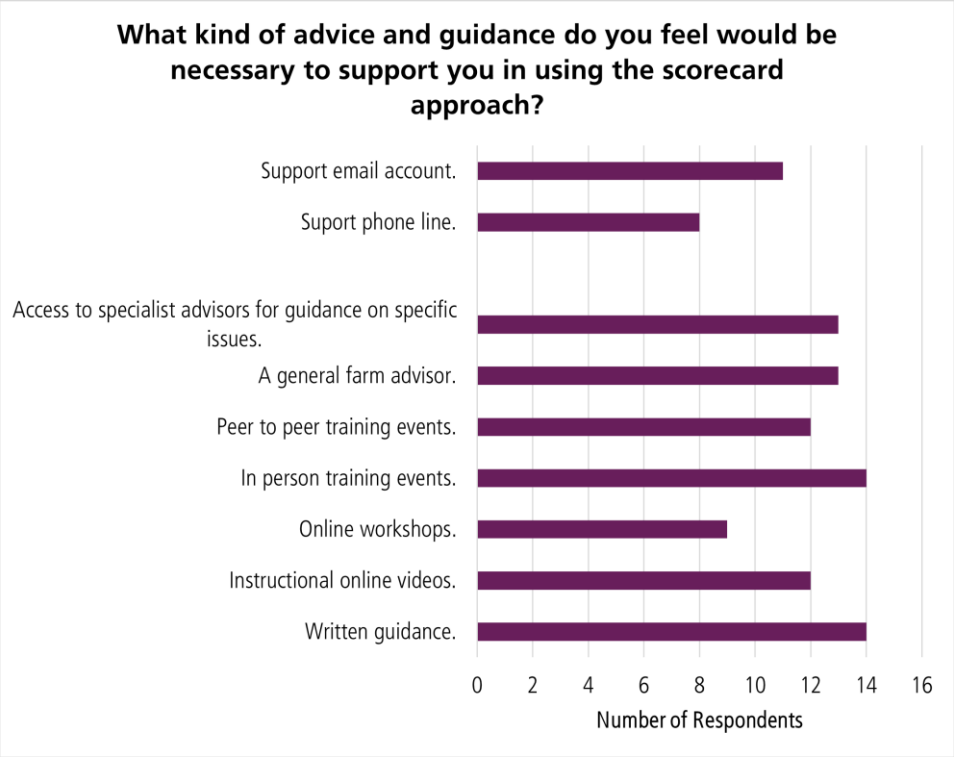


There was consensus among the advisory group that spatial priorities should be decided by convening a local decision-making process, balancing the views of farmers, commoners, landowners and representatives of policy objectives, covering both local and national perspectives.

Advice & guidance

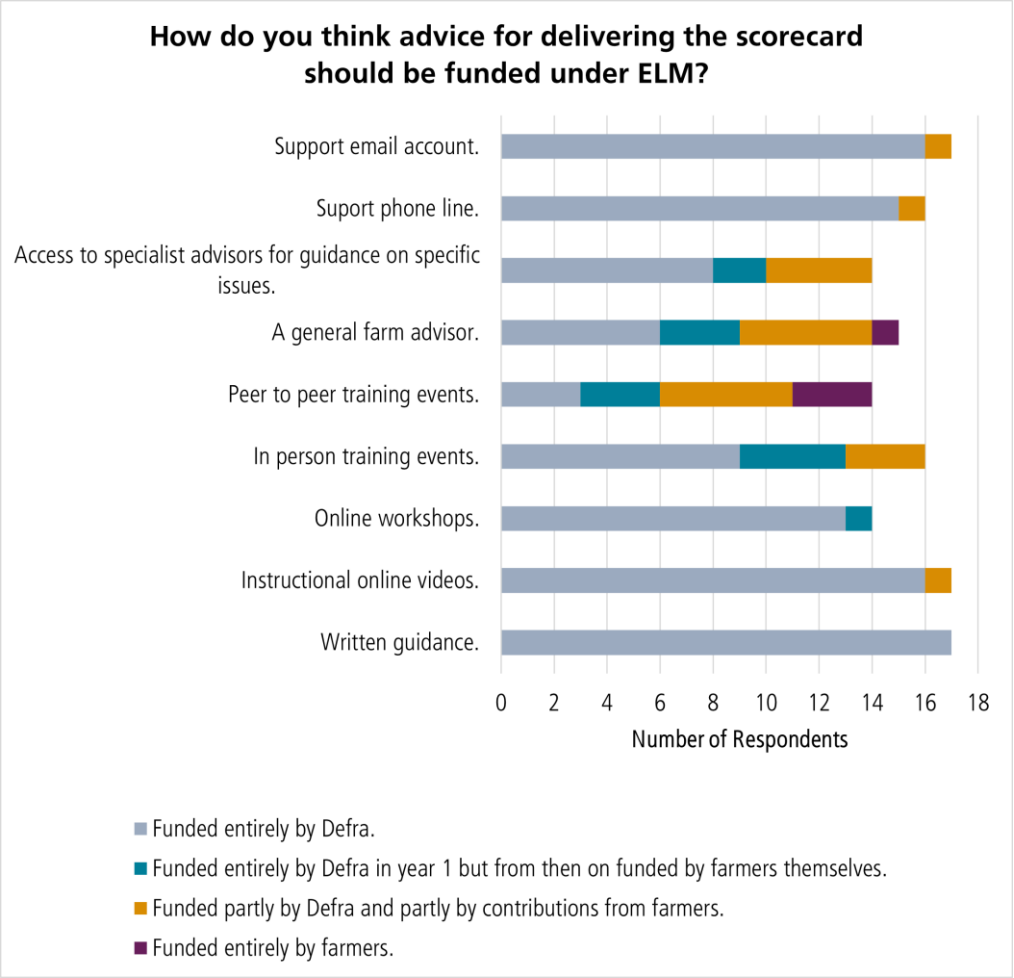
The consensus amongst farmers was that it should be feasible for a farmer to deliver ELM without need of external advice all previous experience suggests that new schemes require support, (ref 1, 5 & 6). Of the 14 participants surveyed after completing the first version of the scorecard 13 stated that even if they were capable of completing the scorecard they would want to retain the option of having additional advice. The 17 farmers surveyed after completing scorecard's second version identified that a range of options to access advice was desirable, illustrated in Table 3. This view was supported by the advisory group. There was no clear consensus on the amount of in-person advice required to support use of the scorecard.

Table 3



Those surveyed on the provision of in-person advice identified the Dartmoor Hill Farm Project as the preferred provider of advice. A significant majority of the 17 survey participants felt Defra should pay for written, online or phone based support. Only 1-3 participants expressed the view that in-person advice should be paid for entirely by farmers. This finding is similar to the advisory group's recommendation that in-person advice should be paid for in part by Defra with supplementary contributions from farmers (see Table 4).

Table 4



Facilitation

Discussions with the advisory group identified that collaboration to deliver agreements on common land was significantly impaired by the lack of facilitation and a framework for delivery. As one member of the Advisory Team described it, “This present situation is a lot of money chucked on the table with no independent facilitation that’s just a recipe for disaster”.

The three commons identified that guidance would enhance the ability of commons to collaborate (Appendix 4). This guidance should include a template supported by an independent facilitator who would guide the process of a common agreeing a vision prior to entering an agreement and then aiding the delivery of that agreement through annual work plans. Two of the three commons felt this process could be improved by a guide outlining which landscape features to address when developing a shared vision.

When seeking alternative funding opportunities relating to ecosystem services farmers unanimously agreed that the role of a facilitator was essential in bringing them together to develop a shared plan for submission to private funders. Farmers articulated that this had been a transformative process for them and the two funders

engaged in the trial also identified that in-person facilitation had delivered their best results.

Independent facilitation was identified by those farmers in commons agreements as very important and where it was absent the administration of agreements proved difficult. In the absence of facilitation some farmers sought clearer guidance on the administration of a common including the distribution of money.

The case for providing independent facilitation appears to be conclusive. At those times when independent support and advice was not available from a facilitator the DFF trial did not secure the necessary commitment from the participating farmers. The lack of support and facilitation are cited by the farmers as the most important factors contributing to poor delivery, (Ref 1, 2 5 & 6).

Collaboration

On home farms and commons it was identified that additional payment would encourage collaboration around specific objectives/outcomes (Appendix 4). When asked how the scorecard approach could deliver Nature Recovery or Landscape Recovery the majority of participants in the commons workshops suggested financial incentives; adding additional financial value to the most desired outcomes. For example if the Marsh Fritillary butterfly is a priority species in the landscape then additional scorecard questions related specifically to management for this species are made available to farmers as an optional extra. Of the farms trialling the scorecard 71% also supported this approach to incentivising collaboration on targeted outcomes.

Payments and Innovative Delivery Mechanisms

The initial baseline survey established that 52% of the 28 participants agreed or strongly agreed that the principle of payment by results is fair and that they believed it would enable them to deliver better results. Regarding commons 48% agreed or strongly agreed that it would enable greater involvement by commoners in their agreement. The idea pf delivering ELM by “payments by results” using a scorecard as the basis for determining payment was developed.

Developing a payment by results approach that incorporated natural capital values, alongside values for other less tangible (measurable) public goods such as beauty, heritage, and engagement, proved complex and outside of the resources of the T&T (Appendix 5).

However an opportunity was provided to consider natural capital accounting. The Duchy of Cornwall enabled access to work undertaken by Andersons Midlands on their behalf that measured and began to value the natural capital on one of their farms on Dartmoor.

The scorecard was populated to reflect the public goods evident on the demonstration farm. The management costs for the delivery of natural capital on that

farm, identified by Andersons, were then used to set the appropriate payment levels for the score achieved by the demonstration farm. Adjustments were made to the costs using data from Defra's Farm Business Survey data. The Farm Business Survey data for Dartmoor only consists of ten farms so data from Bodmin Moor and Exmoor were incorporated to provide a more representative sample. Whilst there are differences in farming between these three south-west uplands (see ref. 7) it was still viewed as enhancing the reliability of the data.

The Duchy's demonstration farm's management costs were used to establish values for selected activities. These management costs were then developed to provide a range of scores. Once a financial value was secured for each score it was possible to model the impact using the scorecard as a payment system. The UKHab data generated by the SWEEP satellite mapping system was used to identify the area of the holding covered by a particular feature and then the farm's score for that feature was used to generate an area-based payment.

A first attempt at using this process to ascribe values to the scorecard illustrated that financial values based solely on management costs left the three holdings, used as case studies, unviable as businesses. It also created perverse incentives to support higher management cost activities even if they delivered fewer public goods. For example, herbal leys were identified as having a greater value than permanent pasture because they have higher management costs. This model has not yet been used in a wider consultation with farmers, but it is evident that payments must reflect more than cost of delivery if active farmers are to be retained as land managers on Dartmoor.

The model used in consultation with farmers, is set out in Table 5. It combines management and fixed costs. Fixed costs were distributed unequally to redress perverse incentives created by management costs.

Table 5: illustrative only; values = scores

REVISED SCORING BRACKETS

Scoring (£ / Ha)	**Minus 1 to 5**	**6 to 8**	**9 to 11**	**12 to 14**	**15 to 17**	**18 to 20**	**21 to 23**	**24**
Grassland Average	0	10	25	43	77	141	205	249
Un-Improved	0	10	25	40	90	189	288	353
Semi-Improved	0	10	25	36	60	123	186	234
Improved	0	10	25	52	82	112	142	161
Herbal Ley 4+ yrs	0	20	50	80	119	167	215	247
Scoring (£ / Ha)	**2 to 5**	**6 to 8**	**9 to 11**	**12 to 14**	**15**			
Heathland	0	10	40	213	507			
Scoring (£ / Ha)	**Minus 4 to 5**	**6 to 8**	**9 to 11**	**12**				
Valley Mire / Rhos Pasture	0	40	148	318				
Scoring (£ / Ha)	**Minus 3 to 5**	**6 to 10**	**11 to 13**	**14 to 16**	**17 to 19**	**20 to 22**	**23 to 25**	**26 to 28**	**29 to 30**	**31**
Woodland - Wood Pasture	0	35	82	115	148	181	214	247	275	289
Woodland - Ancient Upland Broadleaf	0	18	65	104	143	182	221	260	293	322
Scoring (£ / M)	**Minus 1 to 5**	**5 to 10**	**11 to 15**	**16 to 20**	**21 to 23**	**24 to 26**	**27 to 29**	**30 to 32**	**33 to 34**	**35**
Hedges	0	0.03	0.37	0.92	1.26	1.34	1.42	1.51	1.58	1.62
Scoring (£ / M)	**Minus 3 to 5**	**6 to 8**	**9 to 11**	**12 to 14**	**15 to 16**	**17**				
Acid Grassland	0	51	137	224	297	340				
Scoring (£ / M)	**Minus 2 to 5**	**6 to 8**	**9 to 11**	**12 to 14**	**15 to 17**	**18 to 19**	**20**			
Blanket Bog	0	22	92	218	344	449	509			

The same costs were used to illustrate payments for both farms and commons. Management costs on common land are likely to be different from the farm data. The management costs of commoning are currently unavailable.

The proposed model was discussed with representatives from the three commons, each of whom had also tested the scorecard on their home farm. There was consensus that extensive work would be needed to further develop the detail but that the payment by results concept outlined was acceptable.

Blended Finance

The most challenging area for development of the T&T was around blended finance. The only area of clarity was that any mechanism which encouraged farmers to compete with one another was not desirable. Otherwise, uncertainty prevailed, even after speaking with companies and farmers participating in blended finance transactions. The lack of clarity around blended finance appears to be an obstacle to farmer participation.

Five potential private funders were identified, representing a range of natural capital, and invited to participate in the T&T. The funders included Southwest Water, The Woodland Trust, Devon Environment Fund, Westcountry Rivers Trust and Forest Carbon. Other funders were approached such as the Environment Bank, however only five choose to engage in this pilot. Each funder was invited to submit a funding offer in response to a proposal by a group of farmers who were already working in partnership (the Postbridge Farmer cluster group). Although the funders were from across the environmental sector, the resulting funding proposals were largely focused on tree and soil management. This reflected the interests of the investors and current market where there is clarity over transacting in carbon credits. Additional offers were made around establishment of herbal leys, development of soil plans and natural capital appraisals.

The funders were then brought together in a virtual meeting to discuss how their offer might evolve to deliver a more collaborative approach, and secure their views on delivering blended finance at a landscape scale. Their views on how blended finance might be included into ELM scheme design. The clarity around the carbon market for trees made this the most attractive funding option. A further workshop was held with the Postbridge Cluster Group to evaluate the potential funding offers, consider how different funding streams could be incorporated into ELM and what support was required for landscape scale collaboration.

The workshops on blended finance established support for a clear division between the funding roles of government and private partners. The preferred model was for government to focus on revenue costs and private finance to provide capital costs. Farmers raised concerns about the risks and potential instability they felt were associated with income derived from blended finance. Concerns included the impact of things outside their control; the impact of climate change on long term

commitments, for example. It was also emphasised that payment needed to be received for maintaining existing features, not just for creating new ones.

One of the issues highlighted in both workshops on blended finance and in relation to land management payments is the entitlement to income. Tenant farmers and those farmers under grazing licenses may not be able to access alternative funding. Farmers expressed a view that landlords would be the primary beneficiaries of any income or assets derived from blended finance. This may be particularly relevant to farmers using common land; their rights are only to take the vegetation (via their grazing animals) and any potential income linked to the public goods that lie below the surface of the common may be denied to them. Limitations of tenure in relation to the duration of blended finance agreements were also identified as a barrier.

4. Conclusions

Land Management Plans

Land Management Plans clearly have a critical role in delivering outcomes. Such plans have proven to increase understanding of the purpose of an agreement and in delivery. Engagement in plan production also improves ownership by the farmers and other agreement deliverers, (ref 8).

Within this Test and Trial land management plans as part of a package together with a scorecard and advice was found to have significant support during all the consultations including the initial baseline survey and the trialling of the scorecard.

The principle of a score-card was supported widely within the consultations. The score-card approach was developed using external expertise followed by testing on-farm (and to a lesser extent on common land). The most recent version was judged to be valuable by 87% of those engaged in the trials. Concerns remain that some public goods are poorly captured during this approach. Some public goods, particularly around heritage and engagement, may be undervalued within the payment by results section and have been moved into a questionnaire section but await further testing.

The scorecard was designed to be used on either home farms or commons. It is worth noting that whilst a score-card has the ability to address both farmland and common land the majority of farmers participating in the advisory group and commons workshops preferred to keep these agreements entirely separate. It is likely this decision was based on the potential risk to both components from failed delivery on one.

All consultations identified that advice, guidance and support were essential to the provision and use of land management plans. On common land this was particularly relevant; two of the commons stated that a clear framework for the development of land management plans is required. All three commons also emphasised the need for facilitation, advice and an administrative structure to be in place to develop a land management plan ahead of entering into an agreement.

The range of support required identified written guidance, in person training and the use of a farm advisor as important.

The SWEEP map has proved an invaluable asset in easily generating UKHab maps for trial farms and commons but had to be complemented with other data to cover the full spectrum of scorecard criteria. Whilst acknowledging the SWEEP maps limitations those trialling the home farm scorecard still felt it added value to identifying habitats (76% farmers) and monitoring change (94% farmers).

Recommendations for Land Management Plans:

- Home farm and commons agreements should be kept separate.

- Develop an administrative framework for commons agreements including internal payment structure.
- Further develop and test the scorecard approach to address delivery of outcomes linked to all three levels of ELM and to ensure relevance to common land.
- For wider application of a scorecard-based approach questions relating to forms of agriculture other than upland livestock farming would need to be developed.
- The SWEEP mapping system developed for this T&T would benefit from testing over a longer time period. The potential role for farmers and landowners or volunteers in ground-truthing the scorecard should also be tested.
- Explore the use of technology to link mapping, planning and monitoring using the scorecard and SWEEP map. There was a significant appetite for access to a variety of data layers and functionality. For example, 100% of respondents wanted both paper based and cloud based functionality with 93% wished to submit scorecard evidence through a digital map and 86% wanted a mobile phone app to support delivery.

Develop and trial a 'payment by results' approach that could operate on commons as well as 'home' farms

The principle of payment by results or performance payments was generally well supported. Setting payments based on the inherent value of natural capital outcomes was considered but was not progressed due to limited resources. The opportunity to use existing natural capital accounting work (commissioned by the Duchy of Cornwall); to identify the management costs of producing specific habitats on farm was however taken. Two iterations of payment structures were produced. The second iteration was reviewed by farmers form the three trial commons and, accepting the detail needed further development, the concept was endorsed.

The principle of combining management costs, with a contribution of fixed costs linked to a score for quality of delivery across an area was only applied to habitats as part of this T&T. However, comments by several farmers surveyed included a desire for beauty, heritage and engagement to be included in a payment by results approach.

The Defra Farm Business Survey does not currently separate out the cost of actively managing the common from the costs of the home farm business. In order to set informed values for a payment by results approach to commons improved data on the cost of commoning are required.

Recommendations for payments by results:

- Farmers support a payment by results approach to ELM.

- Explore a payment by results approach based on natural capital values.
- Development and testing of payment levels suitable for the score-card. The payment levels would need to ensure farms remain viable and are sufficiently motivating.
- Work to value all the public goods and services including landscape, heritage and participation (group/commons agreements).

Explore how private finance initiatives and other forms of environmental net gain could be incorporated into ELM at a local level.

Both farmers and funders identified facilitation as essential to work collaboratively on developing and funding landscape scale projects. Whilst a range of potential funders were approached only those from the environmental sector, with a funding interest heavily focused on tree and soil management, engaged. This reflects the current market where there is clarity over transacting in carbon credits. For farmers facilitation delivered by a trusted local person was important. Farmers and funders seek greater clarity on blended finance.

Innovative Payment Recommendations:

- Provide facilitation for farmers, landowners and funders to work together to deliver landscape scale projects.
- A farmer suggestion was to include a ‘check box’ option on ELM agreements enabling farmers to select the options of selling any relevant carbon or biodiversity credits directly to Defra or to opt out of selling directly to Defra in favour and retain the right to sell their credits directly.
- Issues that require clarification include, should farms only trade carbon credits available after offsetting the emissions of the farm, stacking functions for trade and the impact of tax on private finance income in comparison with stewardship (ELM) payments.
- Farmers expressed a preference for Defra to manage revenue payments and private funders focus on capital works.

Explore the role that National Park Authorities can play in shaping, facilitating and delivering ELM

Whilst all stakeholders agreed that Dartmoor as a landscape was the appropriate area for setting local spatial priorities the choice of boundary was inconclusive. A hard boundary was considered problematic for farms with land in and outside the proposed boundary. The support for the national park boundary was inconclusive.

During the baseline survey respondents showed a clear preference for existing farmer/commoner led organisations to be engaged in setting local landscape priorities. The DNPA and Dartmoor National Park Management Plan process were the second preference.

There was strong support for the individual commons agreements to fit within a wider context so that when combined they have the potential to deliver the wider ambitions. This process should be facilitated. This function is already performed by National Park's Management Plan and this could be further developed.

One common made specific reference to this process and expressed that the National Park was the right body to oversee the process but that the information required for farmers to deliver ELM was not within the current Management Plan. One common favoured having a Dartmoor wide board to oversee the process as an alternative model.

During the development of the scorecard and the commons' vision process for land management it was recognised that the DNPA was uniquely placed to provide advice across a range of public goods, (access, historic environment and landscape).

The Dartmoor Hill Farm Project was also identified by farmers as a preferred provider for in person advice. No further work was done to ascertain if this reflected confidence in the Dartmoor Hill Farm Project based on existing staff or whether that the project operates under a steering group which includes farmers.

Recommendations on the role of National Park Authorities:

- The role of National Park Authorities will require sufficient resources, including financial, to provide staff with the necessary skills related to the range of public goods relevant to the National park.
- Review the structure and governance of National Park's Management Plan processes to ensure it is fit for purpose; inclusive and relevant to the public goods. It should address spatial prioritisation and explore models of governance that ensure it is respected by the farming community.
- To use the revised National Park Management Plan process to support the delivery of ELMs.

References and sources of supporting information

References referred to in text.

Ref no.	Name	Date	Link
1	Dartmoor Moorland Vision and Dartmoor Farming Futures evaluation; Report to Dartmoor National Park Authority, John Waldon	2021	Farming Futures.
2	Dartmoor Farming Futures Project: Independent Project Evaluation, Cumulus Consultants Ltd, report to DNPA & NE. Report No: CC-P-587,	2013	Cumulus Report
3	State of Farming on Dartmoor; report to DNPA, CRR University of Exeter	2002	State of Farming
4	Turner, M, Robins, K and Silcock, P Hill Farming Systems in South West England: economic viability and the delivery of pubic goods. Exeter University report. Exeter	2013	N/A
5	Economics of Co-ordination in Environmental Stewardship, Project No. DO0119, CCRI report to Defra & NE, UK 2012, (DFF is case study no. 2).	2012	Defra Report
6	Improving Rural Delivery: Identifying principles for good environmental delivery; Report of a Workshop held on behalf of the RSPB , January 2004; Henry Buller and Matt Lobley. Centre for Rural Research, University of Exeter	2004	N/A
7	Farming survey 2006 - 2007; SW Uplands Federation, Land Use Consultants	2007	N/A
8	Our common Cause; Foundation for Common Land	on-going	https://foundationforcommonland.org.uk/our-common-cause