Programme Event Report 1

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Introduction.

The UK Research and Innovation (UKRI) Landscape Decisions SPF (LDP) organised a virtual event that ran during the summer of 2020, the event was designed to replace an in person workshop planned for April 2020, which was cancelled due to the Covid-19 Pandemic.

The main aim of the workshop was to aid networking between the projects undertaking research within the programme, to get to know each other and each other's work. More specifically the Programme Coordination Team (PCT) wanted to facilitate a greater understanding of the breadth of the activities in the programme, encourage synthesis and links between projects, allow the projects to engage with wider issues in the programme and highlight information that would help to answer a few big questions in the aims of the programme.

The event

Event sessions were broken down into sections help avoid online fatigue and ensure that everyone was given an equal opportunity to speak.

Project presentations

Each of the 52 projects recorded a presentation covering a general overview of their project, the main aims and research questions and answering the question 'how do you feel your project will enhance the decision making process in the UK?'

The presentations were uploaded onto a programme YouTube channel in themed clusters:

- Comparing, combining and improving models, and creating tools and frameworks
- Modelling specific factors
- Understanding shared social values (making invisible values visible)
- Assessing how the social sciences/hums/arts can contribute to LD making and inform LDM models and tools
- Multidisciplinary understanding - understanding how decisions are made and integration between disciplines.

Project videos

Project videos can be viewed here: https://www.youtube.com/channel/UCMhiieyfnhuycxy3e_VkF-A/playlists and are also available via the links on the individual project web-pages, these can be viewed here: https://landscapedecisions.org/projects/

Plenary style feedback videos.

The PCT recorded plenary style feedback videos for each theme. These focused on how the projects fit into the overall wider landscape decisions objectives, commonalities and links between projects.

PCT feedback videos can also be viewed on our YouTube channel at: https://www.youtube.com/channel/UCMhiieyfnhuycxy3e_VkF-A/playlists

The presentations informed and directed four discussion session topics:

- Understanding people's interaction with landscapes and landscape decision making
- Multi-functional landscapes and Ecosystem Services
- Unrecognised and new landscape pressures
- Levels and scales of landscape decision making

Attendance was excellent with up to 89 participants, and most projects were able to send at least 1 representative.

Each session was chaired by a member of the PCT assisted by moderators to help ensure fair and open discussions. The topic was introduced, and two specific questions posed. Breakout rooms were used to facilitate smaller groups for productive discussion groups chosen to be purposefully interdisciplinary and remixed between the two sessions. Groups were chaired by members of PCT who delivered feedback to the main room at the end. A full set of notes was completed by each session and breakout room chair.

Writing groups.

Programme participants were invited to be part of small post-event writing groups. A set of topics were proposed by the PCT based upon the content and outcomes of the discussions. The self-led writing groups refined the topics and selected which groups they wished to participate in. A member of the PCT participates in each group, each of which is an output with different styles and target audiences appropriate to the topic.

Summary of discussions

1. Understanding people's interaction with landscapes and landscape decision making

How are people's interactions with landscape and landscape decision currently understood?
There was wide-ranging discussion in the four breakout groups. Discussions included how projects are currently interacting with stakeholders and indeed who 'stakeholders' are in the landscape.

Many project teams have existing networks linked to organisations with remits ranging from the local to the regional or even national and international. Workshops with stakeholder groups were the most common method for projects to interact with people discussed, but other methods such as interviews, community voice and creative arts methods were also mentioned.

There was a split between the projects approach to interactions, model development was targeted towards trade associations and policy development, often at least one step removed from local interactions and individuals within a landscape. In contrast, community projects interact far more frequently at grass roots level on a personal basis.

Many projects are using the arts to understand landscape decisions and how people interact with them. Personal stories and narratives can be used as information sources for landscape decisions, with arts methods revealing the wide range of different meanings that are held by different groups of people about landscapes. Creative approaches excel at giving voice to neglected or marginalised groups.

This split between top-down/policy-science-model approaches and people-up/arts based perspectives raised the questions is it possible to make model based approaches more participatory or connected into democratic decision making? And how can you bring diverse lay voices into policy making?

How are we making an improvement on that collectively as a programme? i.e. are there themes within the current programme that will help to improve how we are doing this?

Discussions highlighted that in some underrepresented groups it is not a case of improving how we understand how they make decisions or interact with decision making, but more that we need to start doing it.

Examples included young, disadvantaged people, recreational users and young farmers, where a first step would be to involve and work with them. This feeds into the broader points that landscape decisions currently only interact with particular stakeholder interest groups, and getting communities who don't feel they have a voice involved is tricky because there are multiple barriers; for instance the language of decision making is often bureaucratic and hard to understand.

Extending the uptake of community interactions by broadening the scope of the stakeholder base and pluralising voices running through the projects was considered an important step.

The engagement of young people was raised more than once, for a long-term solution we need to engage and include them now, generating a situation where they gain knowledge of their surroundings, engendering responsibility for and ownership of the environment.

Participatory modelling was an approach suggested to ensure involvement of stakeholders. Participatory approaches to landscape decisions need to be designed, as we often rely on fairly old methods such as workshops, this is an area this programme could contribute to. Potentially delivering a set of principles for participatory landscape decision making.

Improvements in the decision making process can certainly be made through modelling development. Improvements to models are being made by building decision making trees with machine learning based on observational data, reducing uncertainty and comparing the gains from simple to more complex models, however it is important that the developments are matched by an improved framework that facilitates interpretation of the outputs by users and allows them to use the tools.

Using different media and sources of data combined with machine learning is being used to try and understand how people view landscape aesthetics. However there is a danger (particularly with images in social media), for people to focus on the idyllic, creating a bias against less visited landscapes. Aesthetics play a role in how people interact with landscapes and there is a shift in ideas of what people find aesthetically pleasing which needs to be taken into account.

Views about how appropriate it was to widen models to include additional metrics varied, with a feeling that wrapping everything up in models will not lead to better decision making as there is often a gap between modelled metrics and other information such as participatory views. In addition, not everything can be described using data as decisions are often emotional.

The scale at which data or views are incorporated into the decision making process is important, for example including community level or local views. There was a discussion on how, can, and should we seek to establish bridges between the creative arts and physical science and modelling perspectives. Some argued for need for bridges, others argued that there are fundamental differences, with the arts approaches being about generating specificities and the science or modelling approaches being focused around the generalities.

2. Multi-functional landscapes and Ecosystem Services

How do you understand multi-functional Landscapes?
Multifunctional landscapes were described using the ecosystem service concept, landscapes that provide multiple functions, in terms of services and benefits. However, it was also argued that, on another level, multifunctional landscapes are inherit in our view of landscapes. It is impossible not to have a multifunctional landscape, as everyone engages in the landscape surrounding them in some way. Different dimensions of landscape will also define different functionalities.

Multifunctional landscapes are also about what happens in them, and we need to leave space for things to exist and thrive. It was argued that the ecosystem service principle is a predicated anthropogenic view, implying a one-sided, human relationship with that land. We need to consider not only how landscapes function for people, but also how they function for nature.

It was argued that it is important to not reduce relations with the 'more-than-human' to a language of function, that other terms need to be brought into discussions, such as rights. We need to recognise how the term multifunctional landscapes is being used by different sets of stakeholders, as that opens up opportunities: e.g. allowing discussions of biodiversity to be bought to the fore by providing a framework that challenges single-use discourses. This viewpoint was challenged, and it was argued that it narrows the debate because of its focus on functionality which neglects other, more emotional, empathetic, relations that people have with landscapes.

Alternative ways of framing the multifunctional landscape debate include landscape character assessments, which take into account the cultural, aesthetic, man-made dimension of a landscape, and the historic landscape assessment that represents a different type of framework to work alongside others. There was a general idea that there is currently a huge gap between quantitative and qualitative approaches to inform decision makers.

The issue may not be so much with the concept of multifunctional landscapes but more how do you undertake decisions, how do decision makers balance competing functions? Can we bring diverse needs to Government?

There is a challenge that although stakeholders recognise landscapes as multifunctional, they emphasise different functions, or differ on what to prioritise. The aim would be to integrate priorities in a management plan, but the challenge is scale. Different landscapes deliver different services and there is a need to recognise this diversity, discussed in the land sparing / land sharing debate. There is an important scalar dimension in multi-functionality that needs to be recognised: It might be possible to be multifunctional at a country scale, but at a local scale who gains and who loses is more profound and has more implications. This links to the central concept when talking about multifunctional landscapes of conflict which can be open or hidden.

What are the current challenges in and alternatives to, Ecosystem Service approaches to evaluate landscape functions?

Different services operate at different scales, and it is difficult to connect across different scales. The ecosystem service approach models services or functions and not a whole landscape. Many of the indicators that are quantified are proxies for services. By trying to measure a landscape you inevitably bring a scale that has functions that are hard to measure. Alongside this, the scales of decisions on the landscape vary. Presently we often define the appropriate scale to work at by the scale the natural processes are operating on and not the scale/s on which the decisions are made. Decisions taken at some scales have footprints across the whole UK, or even internationally, but some only effect local areas. Currently we model ecosystem services in a fairly local way in terms of biophysical functions, but also in who we are doing it for, or the decisions made from it. Using a suite of tools more often at appropriate scales would be advantageous.

Challenges that were recognised in the discussions included uncertainty in the models as well as the trade-offs and synergies between different ecosystem services. It was agreed that we need to be able to understand the interactions between the different components in the landscape and include these in the modelling. This understanding also needs to be communicated to the user, especially how information flows from one model to another and what impacts improvements have. One of the major challenges comes with influencing policy and practice, to communicate what the modelling does.

Using the ecosystem service framework to talk about the health and well-being of an ecosystem is difficult as a landscape cannot be considered like a living organism, while we can give an idea of the health of the individual aspects within the ecosystem, it is challenging if not impossible, to give a health status for the whole ecosystem. There are challenges in the quantification or measurement of services that come from a landscape, but also in inclusion of those things that are not services. The concept of the ergosystem was introduced as a way to make individual voices heard in the system and in the models. The ecosystem service concept is an anthropogenic, instrumental framework, it was designed to be holistic and break the silos between decision makers. It was argued that when talking about stakeholders there is a gradient of relevance of the landscape to stakeholders and a gradient of influence of the stakeholders in the decision making process. This should move beyond people and acknowledge ways in which the ecosystem service approach could think beyond the human.

Despite some participants being uncomfortable with the language of ecosystem services, there was a recognition that this language and ideas had traction in government and will shape future landscape decision policy. The ecosystem service approach does raise awareness about intrinsic links between action and impact on the landscape, highlighting trade-offs and synergies. Despite heavy criticism it was recognised as an imperfect but pragmatic tool, but must be viewed as only one tool in the tool box.

3. Unrecognised and new landscape pressures

What are the poorly recognised pressures and emerging challenges on landscapes?
Some pressures that were highlighted included the separation between different drivers of change at different scales, natural variation, locally driven change and globally driven change. Better understanding of the integration of these drivers is needed. Examples included:

- The energy sector - landscape decisions about where to put infrastructure for green energy e.g. positioning a wind farm could be considered a local decision, but it has large scale impacts.
- Changes in crop types grown in different landscapes as a result of shifting bioclimatic envelops – shows how landscape decisions on a regional scale are affected by global impacts.

There may be different pressures in different areas, and the same pressures may be realised differently in different areas. There is a need to recognise how broader concerns map into particular locations: people engage with big issues but they need to be translated into local contexts and concerns.

There is a focus on pressures that people put on landscapes and what people need out, but landscapes have to sustain a lot of other species, what these species need has to be recognised and understood better. There is a need to consider the relationships people have with land outside of the simple exploitative framework. We need to consider social relationships as well, particularly at the local scale where people's relationship with land is often overlooked in landscape decision making. Covid 19 has highlighted that access to land is not equal, and that it is important to recognise the significance of access, not just consider issues of ownership. The temporal dimension of these relationships with landscapes should be recognised, some people are transient through a landscape, and others have long-term multi-generational relationships with specific landscapes. We must also consider people's relationship to land in a long-term historical perspective.

Areas that are often overlooked when we think about landscape decisions and multifunctional landscapes were referred to as 'marginal landscapes'. These were considered as areas that are less productive or forgotten areas that might be less cherished. The inclusion of urban areas into the discussion was also highlighted as rural landscapes dominate the typical view of a landscape. However, alterations in the functionality of areas around settlements in particular is a very big area of change, how to do that without impacts on the environment at a larger scale is an increasing challenge. For example the movement of people out of cities may be connected to issues of land fragmentation.

Other examples of challenges relating to landscape components that get less attention include soils, which play an important role in enhancing and preserving above and below ground biodiversity, storing water and carbon. Landscape decisions play an important role in this process, choice of crop and land management practices, could have unintentional impacts of soil properties. Groundwater level is a further example, with reduced recharge due to climate change and increased extraction for supply in certain areas, landscape decisions around these pressures have consequences for ecosystem function and landscape character.

A challenge that is becoming prominent in the modelling community is the move away from taking single decision makers and single sites into consideration, to looking at multiple users of vast expanses of land. There is a need to recognise system interconnections, landscape decisions may affect and be affected by other policy decisions, for example transport, house building, managed retreat of coastal area and tourism.

There is an opportunity to look to other disciplines to bring in some of the pressures that sit beyond physical and environmental modelling but have an impact on landscape decisions. There is a broad social structure that helps create what a landscape looks like and who uses it, for example considering legal frameworks, property rights, land ownership rights, social values as well as economic values and types of land owners and priorities could be considered. Pressures should be recognised as context dependant, what is poorly recognised in one discipline may be well recognised in another.

Interdisciplinary working was identified as a challenge, there is a need to think about pluralising voices, and improving connections that already exist. Working across sectors in areas that can both benefit, for example the heritage sector not being a barrier to change but rather being enhanced by working collaboratively with ecology and environmental modelling.

How do we address them, and are any more urgent than others?
At the heart of landscape decisions is the fact that land is finite. There will always, therefore, be conflicts around alternative uses, which leads to a need to prioritise; this is where models can help. Ecosystem service tools try to evaluate the effects of different land use configurations on different services, if they are accurate, this can help to prioritise decisions which optimise one or more target outcomes. However, all models have limitations so using combinations of different models can be beneficial.

In tandem with this is a societal challenge - how to engage communities to remediate their landscapes? Fostering an understanding of how communities work within a locality is important. Examples of successes in place-based partnership schemes were presented. They have had success in addressing the lack of engagement of communities in landscape decision making by getting small local charities and small community groups to do the delivering and bring landscape scale thinking into their orbit. Examples of how effective the arts are in helping facilitate bottom up engagement with top down decision making and vice versa were given.

The next challenge identified was how to reconcile these place-based arts driven narrative approaches with the biophysical modelling. It was recognised that it's important to allow space for both processes, both communities have something to bring to the table and connect the models with the narrative. Questions raised included:

- Can we better include people into the modelling?
- Can narrative fill in the gaps which models can't fill?

It is important to recognise when we are talking about place-based knowledge and people living in a place, that it is a challenge if people are not in situ for long periods of time, e.g. tourists, transient populations driven by education, and unstable employment. Questions raised included, how do we engage with them and how do we model this? Local decision making modes will look different in these situations. If people are more mobile and not located within a specific area, there is often a more homogenised sense of landscape, there is often a generic idea of what landscape is. For example there may be talk about 'the countryside' or 'the coast'. To counter this, current land reform and the process of community buy out in Scotland is triggering rural repopulation, where being located is of fundamental importance. There is an embedded understanding of landscape processes and quite transformative agendas driving landscape decisions.

4. Levels and scales of landscape decision making

How do you understand different levels/scales of landscape decision making and the interactions between them?

Two different types of scale were discussed in relation to landscape decisions. Levels and scales of participatory decision making and spatial scales of processes. Communication is needed between these two. Spatial scales are still a good framework to think about how we understand processes, and models help at a range of scales, but tools need to be fit for purpose which is more challenging at the local scale. Complexity is recognised at the local scale as more detail is inherent, however it was suggested that there is also complexity at the global scale. The question was raised - are any scales less complex for landscape decision making?

One of the challenges in landscape decision making is that the process of making decisions is done differently at different scales. For example, at the local scale, where there is a more intimate relationship between land and people, it may be easier for individuals to influence decisions compared to the national scale where the agenda is dominated by National Government, and therefore different. Different decisions at different scales is linked with different knowledge at different scales, do we have equal knowledge at different scales? If there are knowledge gaps that can impact decisions, for example a decision might make sense at the national scale but if we are missing information at a local scale it can have unintended consequences.

It was suggested that a failure within decision making is the lack of integration with microscale. Policies are often formed with a national template, but microscale understanding of landscape dynamics holds the knowledge and experience of individual people; for example farmers knowledge of processes on field scale, are missed. Equally local decisions are being made (e.g. urban forest or urban expansion) that affect the national landscape, that aren't always made with an understanding of the effect on the bigger regional and national landscape.

It needs to be recognised that the hierarchy between levels of decision making is not a smooth line of transition but is more complex, and it can't be the only form we look at in decision making. When thinking about scale it is helpful to consider the dynamics of thinking, in a two way, bottom up and top down approach. Top down and bottom up both have important roles, and there is a continuum between them and more effort is needed to ensure meaningful interaction across that continuum. There is a huge and often untapped pool of knowledge in local communities; this needs to be integrated with the top down process which is also important as global issues need to be addressed and management implemented in these contexts. Assuring fluency and fluidity between the different scales is one way to approach this problem, e.g. top down policy processes need listen to local people and what they value then translate and feed back up. Where the top down and bottom up models meet is crucial to success.

Integration of different scales and ideas was also raised as a challenge. Bringing it all together and having appropriate complexity in the decisions being made is essential. The interaction between scales can be very problem specific. On one hand these interactions can be clear, e.g. national tree planting, gradual refinement from course scale top down to fine scale local decision making; on the other some examples are more unpredictable, e.g. tourism which is not steered from the top but based around undirected individual decisions.

We should include temporal as well as spatial levels and scales into the discussion. Decision making now will have an impact in the future, and we can learn from the historical perspective, what a landscape has been in the past will impact what it can become. As well as talking about different hierarchical levels and spatial and temporal scales, we also need to think about typologies, for instance, sectors with potentially competing interests (e.g. infrastructure, agriculture, energy productions, recreation, ecosystems).

Some policies may not be joined up, policy makers may not even particularly want coherent joined up policies (e.g. peatland restoration policy may conflict with an afforestation policy). Most of the time policy doesn't tell people what to do it simply influences certain behaviours, for example stewardship schemes. A policy simply makes the option available but in this example farmers don't have to take up the incentive, they could have other motives.

The impact of landscape decisions is sometimes scale dependent, widespread uptake of good practice is needed for large scale impact. For example, if one farmer adopts pollinator friendly measures benefits may not be achieved if neighbouring farms don't. It is important to recognise that not everywhere can make the same contributions to national scale targets (e.g. net zero) regardless of the scale. We also need to be mindful of trade-offs at different scales, exporting externalities; e.g. if you plant forests on agricultural land, the foregone food grown needs to come from somewhere else.

How do we as a programme community link different scales/levels of landscape decision making?
Communication is key for this challenge. There needs to be clarity about what is intended, policy and action can flow both top down and bottom up, and sometimes there are bottle necks of communication in the middle. Arts and humanities can facilitate links in both directions by listening to local concerns and creatively feeding up. The arts are particularly well placed to take non-linear approaches to problem solving especially with respect to communities.

Comparisons of models aim to use different models for different scales; larger scale simpler models for some problems and smaller scale more complex models for others, which can cross reference to different scales of communities making the landscape decisions. The programme can be useful for informing at what scale collaborations should happen, and in letting decision makers know what scale the processes they are interested in operate at, telling them what scale the decisions need to be made at to be most effective.

The questions raised about linking scale can be approached through case studies, to feed back to national monitoring. An example is the STAMP peatland project in Scotland taking widespread large-scale measurements with remote sensing, down to detailed level monitoring at specific locations. Different management decisions are being made at different locations, and the impacts of these can be monitored and fed back up to national decision-makers. Comparisons between the decisions can also be fed back to the land managers making the decisions on the ground, providing two-way transfer of knowledge.

The democratisation of landscape decision making was also raised. This linked back to the issue of power and how power permeates decision making in different ways and at different levels. It was argued that power is also linked into values (in all its forms) and the ways values are used in decision making. Unless we democratise landscape decision making it will replicate existing dominant values which are the values of the powerful.

Even if landscape decision making is democratised it would still involve conflicting views and needs. The questions then become what landscape decision making structures facilitate more shared values? At what scale would democratising landscape decision making be most effective? Local or community scales seem the easiest, but there might be problems with people outside the spatial scale of a decision, people beyond the landscape who may have a stake, or problems with the knowledge base. Equally we shouldn't have people making decisions about a landscape who are totally removed from it. There is a need to compromise.

Discussions around linking levels of decision making in the UK highlighted that there is a level missing. There are a lot of decisions being made at the top, national level, and a lot at the bottom, community scale, but we are missing an intermediate level of communication. In some circumstances it has been left to activists to fill this gap, for example the land reform agenda in Scotland. This relates to how agency and structure interact. Agents act in different ways in different contexts of political and geographical scale. Policies can be interpreted in different ways at different scales and levels of hierarchy, by different agencies and by different communities.

The format of dissemination and the vocabulary is important, key words can help messages to be picked up. Concepts such as "food miles" and "carbon footprints" have been powerful in helping ideas gain traction. In this programme we need to think about how we do this, to increase the impact of research and feed into the process of making better landscape decisions.