EXPLORING LAND DATA

Getting better information to common good land users

A report by

SHARED ASSETS
Shared Assets is a think and do tank that supports people managing land for the common good. At Shared Assets we believe that land is a common resource that should deliver shared benefits for everyone.

We provide practical advice, support and training to landowners and communities who want to manage land as a sustainable and productive asset. We also undertake research, policy and advocacy work to help create an environment where common good models of land management can flourish.

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We’d also like to thank all the people that gave up their time for interviews. We hope we’ve used what you told us well.

Thanks to the funder of this work, The Peter Sowerby Foundation, and our grants manager Tom Hoyle from Cause4, who provided some excellent suggestions as the project developed. Also to The Esmee Fairbairn Foundation for supporting the policy programme which enabled us to develop the ideas that led to this project.
Executive Summary

Quality information on land is crucial to making good decisions about it. Increasing access to this information is important, and it is particularly vital to get it to groups who focus on social and environmental missions. This report is about the information needs of these ‘common good land users’, the data that is available, and how to get it to them. It’s based on a series of interviews with common good land users, data producers, and other experts. We also explored the data, and tested some approaches to making it accessible at a ‘DataDive’ we ran with volunteer data scientists. This report presents what we learned.

Key Findings

1. Common good land users need information for a range of key tasks, including finding and evaluating sites, managing sites better, identifying landowners, informing applications, influencing policy, and understanding the land around them.

2. Despite this, they currently have relatively poor awareness of, and access to, most new sources of land data.

3. It is not a central issue for most, but there is strong demand for a platform that would provide common good land users with better access to information.

4. There is a lot of data that is openly available and could be of use to these users, but it is often hard to find and use.

5. Some existing platforms and resources are useful, but none sufficiently address the needs of common good land users.

6. Integrating newly released land data into a new online platform is feasible, and we were able to develop a simple prototype in one day.

7. We think the three best options for increasing access to information on land are:
   a. A new online map-based platform built especially for common good land users.
   b. Integrating the features users need into other existing online platforms.
   c. Creating a resource that signposts to existing platforms and guidance.
Other Project Outputs

This project also produced an open spreadsheet with two worksheets aimed at increasing access to land data. The first matches users’ needs to available data. The second lists platforms for accessing land data that we came across through this project. Both invite further contributions from the data or land management communities.

Recommendations for key stakeholders

The report finishes with a number of recommendations for key stakeholders on increasing access to information on land:

- **Common good land users:** We call on these users to find out about what is available and make themselves heard, demanding that data is made accessible to them.
- **Government:** We call on government to take an ‘open by default’ approach to releasing land data. We specifically call for the release of the Land Registry ownership information and the Rural Land Register. We also call for a systematic effort to make data accessible rather than just releasing it, and provide some [guidelines to think about when doing this](#).
- **Developers:** We encourage developers to pursue ‘data for good’ projects. In particular projects aimed at increasing access to land data for groups who don’t currently access it.
- **Funders:** We call on charitable foundations and other funders to support data driven projects directly through grants and competitions. We also encourage them to encourage applicants to include subscription fees in their proposals.

Wider implications

This report focuses on land data and common good land users. However, a lot of the findings are relevant to other areas where groups could use open data for the common good. In all these cases it is imperative that key stakeholders think about who could use the data to provide most benefit to society, and how to get it to them. This report should also be of interest to anyone interested in UK land data in general.

Next steps

Shared Assets will be continuing this work by seeking to develop new ways of increasing access to land data. We have already found some great partners to take this work forward with. Now we need to secure funding to develop a platform and get it online.

If you are interested in this project or our other work please check out our website or get in touch with any questions or suggestions - [hello@sharedassets.org.uk](mailto:hello@sharedassets.org.uk) - [@shared_assets](https://twitter.com/shared_assets).
Introduction

At Shared Assets we support a range of models of common good land use, where land is used to produce the things people need, whilst also enriching society and the environment. We want to help create an environment that makes it easier for these groups taking this approach to flourish. There is no quick fix which is going to give these groups the funding or access to land that they need. However there are a number of relatively small changes that we think could make a big difference. One of these is providing better access to information.

In 2015 we started investigating how better information on land could help these projects succeed. Land-based projects often told us about the difficulty of accessing information on land. Information on things like who owns a piece of land, what it has been used for, or where to find new project sites. Better information would benefit a wide range of common good land users. For some it could mean the difference between success and failure. It would make it easier for them to find land, develop better management models, and much more. This would in turn mean more land being managed for the common good.

The more we explored, the more potential data sources we found. A key development was a decision by the Department for Environment, Food and Rural Affairs (Defra), to release the bulk of their data by June 2016. However despite all this data being released, we observed little or no knowledge about the land data available when talking with common good land users. In the open data community there is a lot of discussion about data revolutions, including a revolution in land use. However these discussions are rarely relevant to, or inclusive of the groups we interact with.

We soon came to a few simple hypotheses that led to this project. First we predicted that at least some of this land data would be useful to the groups we want to support. Second that the sector has neither the data skills to access the information themselves, nor the buying power to inspire a private sector solution. If correct, this meant we would need to find a way to get the data to them. Thus we began this project to find out whether our hypotheses were correct, and to find out how to make land data more accessible. The barriers facing common good land users cannot be solved by data wizardry alone, but it could certainly make their job easier.

This report outlines what we learned. It is aimed at a number of different groups:

- Those in the data community who can help get this data into the hands of common good land users. This includes government, the open data community, developers and others.
• Common good land users who are interested in getting better information about land
• Any organisation who is interested in helping increase access to information on land.

Aims

This project set out to answer key questions about the information needs of common good land users, and the potential to meet them using land data. The overall aim was to understand how to get common good land users the information they need to make good decisions. This meant:

1. Identifying the information needs of common good land users.
2. Identifying data, resources, and platforms that could help meet those needs.
3. Identifying gaps in the provision of key information, and the best approaches to filling them.

We have been working on plans to develop a platform to make land data more accessible, and answering these questions was a necessary first step. However, regardless of how we use this information, we also wanted to summarise what we know, so that anyone else who is interested in helping common good land users can build on what we have learned.

Methodology

To meet our aims, we engaged in a mixture of online research, interviews, and testing approaches to increasing accessibility. Most of this research was done from January-June 2016.

Online research

We looked online for information on what data existed and how to make it more accessible. This meant scouring data repositories such as Data.gov.uk, both by browsing the resources of key publishers (e.g. Natural England), and by using keyword searches. We also sought out and analysed existing platforms for providing access to land data. Finally, we also searched for previous research on the information needs of common good land users (but found very little).¹

Interviews with common good land users and other experts

• We interviewed 16 common good land users about the information they need to make good decisions, their current approaches to securing that information, and their thoughts on a new platform. We sought to interview a diverse range of groups, for example in terms of the main activity they are engaged in, and their stage of development. More information on these groups is available later in the report.

¹ One notable exception was a 2011 Geovation project on Local Food Mapping, that considered how mapping platforms could help local food projects.
• We interviewed 10 staff members from data teams across most of the main organisations producing land data, for example Defra, The Environment Agency, Natural England and the Forestry Commission. We asked them what datasets they thought might be useful to common good land users.
• We spoke to a 10 further experts from a range of fields including open data, land data, platform development, and social tech. These interviews mostly focused on answering particular questions that came up in the research.
• We spoke to 2 staff from organisations that fund common good land users. These interviews focused on ways of supporting access to land data.

Running a ‘DataDive’ hack day to test ways of making the data accessible:

We worked with the charity DataKind UK to run a full day ‘DataDive’ exploring ways of making land data useful to common good land users. For six weeks before the event, three data scientist volunteers helped us get to grips with the data, and develop plans for creating prototype data platforms. At the event a further fifteen volunteers helped to develop a range of ways of presenting and analysing the data. The event focused on a particular use case - helping the Ecological Land Cooperative to find a new site for their agroecological smallholdings. This process greatly developed our understanding of what is feasible and useful, and informed the findings of this report.

Report outline

Chapter 1 summarises the key information needs of common good land users - what they need information for, what kinds of specific data would be helpful, and how important it is to them. This sets up Chapter 2 to report on what data is out there. We describe some of the key sources for land data and some key datasets, before highlighting a few of the problems with them. Chapter 3 outlines current ways users access can and do access information, and identifies gaps that needs filling. In Chapter 4 we outline what we think are some of the most promising opportunities for increasing access to land data. The report concludes with recommendations for government and other key stakeholders on how to facilitate better access to information on land.
Chapter 1 - The information needs of common good land users

This chapter outlines why information is important for common good land users, and highlights where land data could support their businesses. It aims to show what kinds of data might be worth prioritising for release, and what common good land users need as a user group. We hope it will help developers and data professionals to develop solutions for them.

Who did we speak to?

This chapter summarises the key information needs that common good land users expressed to us. This is not likely to be a comprehensive list of all possible needs. However we spoke to a diverse range of groups and are confident that we have identified most of key needs that land-based projects are likely to have. Interviewees were involved in activities including:

- Food and Farming
- Community renewable energy production
- Woodland management
- Parks and other green space management
- Other public space management

Many participants were involved in more than one of these, or were involved in other non-land based business activities in addition to their land management activities. We also spoke to individuals who were not yet running land-based projects, but intended to do so in the future.

Example: Ecological Land Coop (ELC) (Agro-ecological farming)

ELC was set up to address the lack of sites for ecological land-based livelihoods in England. Their solution is the creation of small clusters of affordable residential smallholdings. Finding new sites is currently a long and expensive process. Better information on land could help them identify and compare suitable sites, and rule some out without needing to visit or commission surveys. This would mean more time for setting up new smallholdings, helping more people, and running a more sustainable business.
What do they need land data for?

We talked to each common good land user about the kinds of tasks they need information for. Some of the key ones they reported included:

- **Finding and evaluating sites**: Most projects need to find a site at least once, and finding new sites is a regular task for some. Finding land can be an arduous and expensive process. Identifying where to look requires a lot of information, as does evaluating and comparing particular sites.
- **Managing sites better**: Land data is useful for developing management and business plans. Information can help people make key decisions such as where to grow what, or how to develop infrastructure. It can improve business models, and lead to more social, economic, and environmental value being produced.
- **Identifying landowners**: Knowing who owns land is crucial to being able to engage with it. Groups might want to talk to a landowner about getting access to their land, or about contamination from neighbouring sites. They might want to engage local landowners in supporting a project, or understand plans for future development. Identifying landowners is very important and often very difficult, as we discuss later in the report.
- **Informing applications**: Most common good land users end up writing a lot of applications, and these require information on land. In particular, they need information when applying for grants, subsidies, or planning permission for new infrastructure.
- **Influencing policy and decision-making**: Many common good land users are interested in system change - both changes that would help their projects, and changes that would help realise their vision for society. Better land data could help them evidence their solutions, and convince key stakeholders about their projects or ideas.
- **Understanding surrounding areas**: All prospective and existing common good land users need to understand the area surrounding them. Better information could also help inspire prospective common good land users them to pursue certain projects, by helping them understand what is possible and what is needed.

**Example: Peckham Coal Line (urban public space)**

The Peckham Coal line is a proposed elevated urban park built on disused railway coal sidings to form a natural, physical and social link between two high streets. The team’s progress has been delayed whilst waiting for the completion of an expert led and resource intensive survey of the site. Better land data on things like the terrain and local biodiversity could help them get on with their site planning without having to wait on others or spend more money on surveys.
What data do they need?

Common good land users may require several different types of data to meet each of the needs described in the previous section. The following are the main categories we have identified, along with some of the key specific measurables within each. For more information, see our open spreadsheet matching needs with data. It highlights the areas of need listed below along with ways in which participants described wanting to use information.

*Environmental characteristics*

- Soil quality (e.g. agricultural grade, acidity, texture)
- Drainage
- Contamination (e.g. from landfill or previous uses)
- Landscape (e.g. contours, altitude, aspects, terrain, elevation of buildings and trees)
- River flow and wind speed (potential to produce renewable energy)
- Flood risk and patterns
- Current and historical land use
- Local biodiversity (e.g. species or special vegetation)
- Local climate (e.g. average rainfall or first frost)

*Location*

- Privacy
- Proximity to key resources (e.g. woodland for heating fuel, or urban centres for work)
- Transport information (e.g. proximity to loud roads or public transport)
- Site access and rights of way

*Infrastructure*

- What is under the ground
- Access to water supply (e.g. mains or natural)
- Existing site infrastructure (electrical, water pipes, polytunnels, shelters)
- Energy infrastructure (e.g. location of gas grids and local energy usage statistics)
- Existing dwellings

*Market data*

- Current land use
- Land and rental prices
- History of productivity
- Grants and other financial support available
- Access to markets and consumers
- Other similar local projects
- Processing sites and infrastructure

**Planning**

- Local planning applications
- History of council decisions on various kinds of planning applications
- Existence of any planning restrictions (e.g. being in a Site of Specific Scientific Interest (SSSI) or an Area of Outstanding National Beauty (AONB)).
- Local and neighbourhood plans

**Ownership**

- Who owns particular pieces of land
- General ownership patterns
- Information about landowners (particularly anything that will aid approaches to them)
- Field and property boundaries
- Information on location of land owned by groups that are more likely to be amenable to land sharing (e.g. local authorities or utility companies)

**Guidance**

- Land management techniques and models
- Understanding policy processes (e.g. planning, grants, subsidies, other legislation)
- Business development

**Example: Sharenergy (Community Renewable Energy)**

Sharenergy help communities to develop renewable energy projects. Better access to land data could mean quicker, cheaper and more effective land searches and applications. It might help them generate quick reports on things like the amount of sun, wind, or water flow. It could help find the best place to put infrastructure - e.g. most suitable rooftops for solar, least disruptive places for hydro or wind. They could easily factor in local wildlife and planning designations.
How important is their need for better information?

In our interviews with common good land users we asked about the importance of their need for better information. In general, response to this project was very positive - people identified with the need for better information and could easily see how a platform for increasing access would help them. Many of those we spoke to were using very little data at the moment, but could clearly see how it would be helpful if it were cheaper and easier to access.

Potential limitations on the value of increasing access to the data were felt to include:

- Land data could help with certain tasks but be less relevant to others. For example data might help identify areas worth paying more attention to, but would be unlikely to offer definitive answers to every question.
- Some of the benefits of increasing access to information would be about speeding things up and reducing costs rather than producing entirely new information. Things like expert surveys, peer networking, and site visits, would still be needed in many cases.
- Common good land users who were settled on a particular site are often already the data experts for that land, so some didn’t think they would learn much from public datasets.

It is also worth mentioning that access to information was not the biggest issue facing anyone we spoke to. Whilst land data might help with things like finding land, and writing funding applications, it can not overcome the huge barriers facing groups pursuing land or funding. Some therefore felt that it was a worthwhile, but fairly minor issue in comparison to things like finance, subsidies and business models. As mentioned earlier in the report, this work is about making life easier for common good land users, rather than presenting data as a silver bullet for every issue.

**Example: The future common good land user**

*They want to be more engaged with local land, but are still at a very early stage in their journey. They may have a few ideas, but don’t know what is needed, or possible in their area. They may never become engaged, or only when they are confronted with a direct threat to a natural asset they love. Better information on land could help them understand the area around them - things like landscape characteristics, biodiversity, and what interesting projects are near them. Access to this information could turn interest into inspiration and innovation.*
Chapter 2 - Information on land

This chapter introduces the key land data we identified through our interviews and online research. This record should provide a helpful starting point for any common good land user looking for better information. We hope it can also draw the attention of government and developers to the kind of data that is likely to be useful.

Our starting point has been data that covers the whole of England, however a lot of the data we identified is actually UK-wide in scope. For a detailed list of the datasets we have identified, matched with the needs described in Chapter 1, have a look at our online spreadsheet.

Main sources of land data

The following organisations are the main sources of land data we identified. We have spoken to representatives from many of these organisations and been in touch with others by email. However we are still not close to being experts on any of their data catalogues. Nevertheless, it is clear these organisations produce a lot of data than could help common good land users.

- **The Department for Environment, Food, and Rural Affairs (Defra)**: Defra is the government department responsible for environmental protection, the food system, and rural development. The recent OpenDefra programme has seen much (but not all) of their data released as open data. Defra releases data itself, for example the [Agricultural Census](#), and also hosts many of the main organisations producing land data, including:
  - **The Environment Agency** is responsible for protecting the public from natural and environmental disasters. It collects a wide range of data, mostly related to environmental monitoring and regulation. This includes data on flooding, land use, contamination, biodiversity, waterways, and aerial and satellite imagery.
  - **Natural England** is responsible for protecting wildlife and landscapes. It collects data on farm and soil surveys, biodiversity, grant eligibility, planning restrictions, and some location data.
  - **The Forestry Commission** is responsible for forestry in England and Scotland. It collects data on UK forests, for example boundaries, recreation routes, forest soils, forest plans, and the National Forest Inventory.
  - **The Rural Payments Agency** is the government department responsible for paying out subsidies claimed through the Common Agricultural Policy. It needs to
collect a range of data to do this, including information on field boundaries, ownership, and subsidies claimed.

- **The Joint Nature Conservation Committee** advises the government on nature conservation. This means providing evidence on biodiversity and natural resources and systems.

- **The Land Registry** is responsible for registering property ownership in the UK. It currently has records for about 80% of the UK, though this information is expensive to access for individual sites, and prohibitively expensive to access on a larger scale. It also produces some useful open data including prices paid for property.

- **Ordnance Survey** is the national mapping organisation for the UK. It produces high quality maps, of which the more detailed ones are charged for. It also produces a number of open data resources.

- **The Met Office** produces information on weather and climate, including trends over time. Most of the data is not open, but is free to use for certain purposes such as academic work.

- **The British Geological Survey** provides expert advice on geoscience to the UK government, private sector and others. It produces data for environmental monitoring and understanding geology, including data on soils, boreholes, hydrogeology, and drainage.

- **Cranfield University** has a Soil and Agrifood Institute, that produces detailed data on UK soil.

- **The Office for National Statistics (ONS)** produces independent statistics on the UK economy, population and society. This includes producing information on UK land use.

- **The Centre for Ecology and Hydrology** does research on land and freshwater ecosystems. It produces data on things like soil, land cover, and river flow, with a policy of making as many of these as possible free under an Open Government License.

- **The UK Soil Observatory** is a partnership of organisations producing information on soils (including some of the ones mentioned above). It hosts lots of different datasets and maps on soil.

- **Local authorities** hold large amounts of local land data. Data produced varies between councils, but all should produce things like a register of the land they own, local contaminated land, and public rights of way. Crucially, they also hold information on local planning applications.

- **Other potential sources of information:**
  - **Large landowners and land managers:** hold data on the land they manage. Some larger land managers, for example The National Trust, publish at least some of the data they have on their land. However other potentially useful data remains mostly private or inaccessible. Utility operators, trusts and charities, and large private estates might all provide useful data.
Smaller land managers: are deeply connected to their land. The data they collect will vary greatly, and little if any will be published. However, new technologies mean they could play a key role in producing land data in coming years.

A selection of high potential datasets

After the interviews and DataDive, we have been able to identify some datasets we think may be highly useful to common good land users. This is certainly only a preliminary list based on our initial forays, but it gives an indication of the types and value of data out there.® If you think we've missed something out please get in touch or update our spreadsheet.

- All land in the UK is given a Agricultural Land Classification. This rates it from Grades 1-5, based on its fertility, something which is useful for a range of users.
- There is quite a lot of data on soil. At the datadive, Topsoil PH and bulk density and Soil parent material model datasets showed potential for helping food and farming groups.
- OS Contours is an open dataset providing 10m contour lines and spot heights. The OS also offer a more detailed version for paying users.
- OS OpenData is a range of open data products from the OS including OS Open Maps Open Rivers and Open Names. Each could be useful to a range of users.
- Defra have published data on road and rail noise, which is useful to anyone who is concerned about running a project too close to a loud road or railway.
- The Met Office offers monthly averages for rain, wind, and days of ground frost. This could be used for choosing between sites based on climate, and possibly for predicting future trends. It is not open data but it available for free in some cases (e.g. academic).
- The Environment Agency's list of historical landfill sites is useful for anyone seeking to avoid land that might be contaminated.
- The Environment Agency's Risk of flooding from rivers and sea dataset can help users understand the risk of flooding for a site and also how to design sites to adapt to flooding.
- Natural England publish a range of data on conservation areas (e.g. AONBs, SSSIs etc.). Users may wish to avoid these areas, as certain development is prohibited within them.

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2 Our default focus was on datasets covering England, however many of them are England and Wales, or UK-wide.
• **LIDAR** data offers huge potential for detailed 3D terrain mapping. This has been made open data relatively recently, up to a resolution of 25cm in some areas.

• **Land Registry INSPIRE Index polygons** show property boundaries and can also give you information on things like size of plot, as well as being a helpful way of dividing up land. They are free to download, but are derived from OS MasterMaps and accordingly some restrictive licensing conditions apply.

• The **Land Registry** holds all information on property ownership. This data would be incredibly useful to anyone who wants to engage with the land around them, but it seems unlikely to be made open data (see also below).

• The **Rural Land Register** is compiled by the Rural Payments Agency to coordinate subsidy payments. It contains information on field boundaries, landowners, and subsidies. It has actually now been superseded by the Land Management System (LMS), however the data from either would still be extremely useful. It was not included in the Open Defra set of releases, and no definitive word has been given on its release.

**Problems with data**

As the previous sections and our spreadsheet should make clear, there is a large amount of land data being produced. However, there are a number of weaknesses in the data, and reasons common good land users are not using it more.

**What the data was collected for**

It is important to remember that almost none of the data we identified was produced with any thought towards helping common good land users, or even external users. Indeed most of the datasets were collected for purely internal, or academic uses. Thus while some datasets sound useful, they may have been collected for a task which has little relevance to the day-to-day operations of common good land users. Most of the data we found has only recently become more widely available. Thus its collection rarely considered the needs of external users.

**Data quality**

A lot of the datasets have quality and coverage issues that limit their usefulness. This might be because the data was collected a long time ago, because it is extrapolated from relatively few collection points, or because of other assumptions and limitations of its production. It may also have errors, or poor metadata, which make it hard to use. Release of datasets does not seem to be related to their quality, and the limitations are not always made clear.
Data licensing

While more and more data is being released as open data, and is therefore free to access, there are still a number of key datasets that are behind expensive or awkward barriers. Some data is wholly inaccessible, whilst others are behind prohibitively expensive paywalls.

The Land Registry is one key example of this. Ownership information is amongst the most important data requested by the common good land users we spoke to. However at the moment it costs £3 to request a record, and a further £3 to see the title plan, showing the ownership boundaries. Not only does this quickly add up when multiple requests are required, but it also represents a barrier to some people accessing the information at all. It also makes it unfeasible to include this information in a general land data platform, or to do any analysis of an area.

Our open spreadsheet matching data to needs

As part of this research we created an open google spreadsheet matching the needs of common good land users with the land data we have identified. We have also invited other individuals to contribute further data if they are aware of any. This spreadsheet contains more detailed information on the needs of common good land users, the possible uses they have for particular types of data, and the datasets themselves. It is designed to be a live resource, and we will continue to update it and invite contributions from others. We may also develop it further in the future, possibly into a wiki. The image on the following page is a sample screenshot of the spreadsheet.
<table>
<thead>
<tr>
<th>Information need</th>
<th>Dataset</th>
<th>Publisher</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil quality (e.g. compaction, chemical analysis, agricultural grade) - identifying suitable land for food growing, forestry, horticulture etc. - understanding how to make the most out of a site</td>
<td>Agricultural Land Classification detailed post 1988 ALC survey</td>
<td>Natural England</td>
<td>This is scanned maps and survey reports, at varying scales and detail. Also some sample points soils data.</td>
</tr>
<tr>
<td></td>
<td>Provisional Agricultural Land Classification (ALC)</td>
<td>Natural England</td>
<td>Provisional Agricultural Land Classification Grade. Agricultural land classified into five grades. Grade one is best quality and grade five is poorest quality. A number of constant criteria used for assessment which include climate (temperature, rainfall, aspect, exposure, frost risk), site (gradient, micro-relief, flood risk) and soil (depth, structure, texture, chemicals, stoniness).</td>
</tr>
<tr>
<td></td>
<td>Long term monitoring data</td>
<td>Natural England</td>
<td>This is vegetation and soil surveys over time. Coverage is limited (37 sites - primarily nature reserves)</td>
</tr>
<tr>
<td></td>
<td>National Forest Estate soils</td>
<td>Forestry Commission</td>
<td>This vector dataset provides detailed (1:10,000) soil information for approximately half the Public Forest Estate</td>
</tr>
<tr>
<td></td>
<td>Advanced soil geochemical atlas of England and Wales</td>
<td>British Geological Survey</td>
<td>5700 surface soil samples, collected across England and Wales, analysed for 52 major and trace elements. Downloadable as interpolated concentrations.</td>
</tr>
<tr>
<td></td>
<td>Wet Map Service for model estimates of topsoil properties (Coursey Survey)</td>
<td>Centre for Ecology and Hydrology</td>
<td>This web map service (WMS) depicts estimates of mean values of soil bacteria, invertebrates, carbon, nutrients and pH within selected habitats and parent material characteristics across GB</td>
</tr>
<tr>
<td></td>
<td>Soils Map Viewer (platform)</td>
<td>UKSC/ various others</td>
<td>The UKSC soils map viewer resource combines loads of different soil quality datasets, some of which are downloadable.</td>
</tr>
<tr>
<td></td>
<td>Soilscape (platform)</td>
<td>Cranfield Uni</td>
<td>Soilscape is a 1:250,000 scale, simplified soils dataset covering England and Wales. It was created from the more detailed National Soil Map (NATMAP) vector with the purpose of effectively communicating a general understanding of the variations occur between soil types, and how soils affect the environment.</td>
</tr>
<tr>
<td>Ownership info (owner contact details, type of owner, owners ambition for site). Possible uses include: - contacting owners about land purchase or sharing - Identifying owners who might be open to collaboration (e.g. local authorities, utilities, national trust, RSPB, Wildlife Trust, Woodland Trust) - identifying boundaries</td>
<td>INSPIRE Index Polygons</td>
<td>Land Registry</td>
<td>This dataset enables you to see the boundaries of land ownership - There is a great guide on using this data in a blog by Anna Powell-Smith (see link in call to the right) - Still no confirmation on whether this will be released</td>
</tr>
<tr>
<td></td>
<td>Rural Land Register</td>
<td>Rural Payments Agency</td>
<td>This contains information on ownership and boundaries of land for which CAP subsidies are being claimed - No confirmation on whether this will be released</td>
</tr>
<tr>
<td></td>
<td>Boundary-Line</td>
<td>OS</td>
<td>Boundary-Line is a specialist 1:10 000 scale boundaries dataset. It contains all levels of electoral and administrative boundaries, from district, wards and civil parishes (or communities) up to parliamentary, assembly and European constituencies. The information is represented as vector digital data.</td>
</tr>
<tr>
<td></td>
<td>Register of Public Sector Land</td>
<td>Cabinet Office</td>
<td>Data from e-PIMS, Government's Property and Land asset database containing details of location, tenure and other key attributes for each asset. It includes details about the buildings, any vacant space and occupiers.</td>
</tr>
</tbody>
</table>
Chapter 3 - Existing access to land data

Having outlined the key needs of common good land users and some of the data that is available, this chapter considers the ways in which the data is accessed, and potentially accessible, at the moment.

Current ways in which common good land users access information

In interviews we talked to common good land users about the ways they currently access the information they need. They described a range of different approaches, encompassing both online and offline methods.

Offline access

Almost everyone we spoke to found some of their data offline, and some sourced almost all their information without ever going near a computer. Some of these methods are relatively slow, laborious, and expensive. However people still find them effective, and in many cases, they could never be wholly replaced by online tools. Methods described included:

- **Exploring an area by foot or other transport**: This was an extremely common approach to looking for suitable sites. Especially in the absence of easily accessible data, common good land users walk, cycle, or drive around exploring the land around them.
- **Peer networks and word of mouth**: Almost everyone relied heavily on local networks, be that of their peers running similar projects, or simply local communities.
- **Paper maps**: Some learn about the land around them by using paper maps, be that traditional maps, or maps highlighting land features like soil quality or flooding.
- **Publishing or responding to publicity materials**: Some users advertised for sites, responded to “for sale” adverts, or even put up signs on the gates of fields, when they were interested in identifying the landowner.
- **Contacting landowners**: Where users were able to identify landowners they might contact them to find out more about the land. It could be especially useful to contact large landowners like councils or utility providers, who might have information on large amounts of land.
- **Data collection**: Some collect data like soil samples or basic wildlife surveys themselves.
- **Employing land professionals**: Estate agents, surveyors, ecologists, and other land professionals play a key role in helping land users access the information they need. In
some cases organisations had been able to secure pro bono help, while in others these services represented a significant, though justified, cost for them.

**Online access**

Users described a range of online methods for collecting information. For some this was just basic google searches, whilst a few were already engaged with land data platforms.

- **Platforms for accessing land data:** Some users had used existing platforms such as MAGIC map from Natural England, to find land data. The other platforms mentioned were [Landshare.net](http://Landshare.net) and [SoilSapes](http://SoilSapes) (more on all of these below).
- **Online maps:** Almost all users employed basic free online maps like Google Maps or OpenStreetMap to get an overview of the area of investigation using aerial imagery.
- **Land Registry:** Some users had submitted requests for ownership information through the Land Registry online.
- **Commercial land websites:** Some users identified properties for sale or rent through the websites of estate agents.
- **Visiting useful websites:** Some users found information by looking through resources compiled by trusted organisations or networks.
- **Google searches:** Users widely reported looking for information through (sometimes long and frustrating) sessions of going through search results.

**Problems with accessing the data directly**

Few of the users we spoke to had ever accessed any of the datasets being released by the organisations described in Chapter 2. If they had, it was through the data being republished on other platforms. One clear finding of this research is that releasing data and making it accessible are absolutely different actions.

**Lack of knowledge about available, data and poor data literacy, amongst users**

In both our day-to-day interaction with common good land users, and our interviews with users or this project, we have encountered very little awareness of what kind of land data is now available. A common reaction to being told about this project is general surprise that such potentially useful data might be available. We hope that this report and our other work in this area can draw attention to the available data and encourage common good land users to seek it out.

Furthermore, almost none of the users we spoke to had the technical abilities to download and display the data being released by the organisations described in Chapter 2. Even if awareness of what is out there was raised, users would need a lot of help to get the data in a useable format.
We found some excellent tutorials whilst working on this project, that make it possible for relative amateurs to use land data. These should be encouraged, publicised and compiled. Ideally the organisations releasing the data should make the development of tutorials a part of the release process.

**Problems with data download sites**

Even if the users we spoke to were aware of what is out there, and ready to install it into GIS software, they would likely struggled to get past the often impenetrable download sites. In particular, we found Data.gov.uk very difficult to use, both for finding data and downloading it. Even the data scientists we worked with on this project often struggled to download key datasets from data.gov.uk. We understand that data science is a specialised skill set, and that the datasets themselves can be extremely complex to use and interpret. However, there is surely no good justification for the process being as difficult as it is at the moment.

Some other download sites proved more simple to use. In particular, the Environment Agency’s [Spatial Data Download site](#) made it easier to download some of the data produced by Defra.

We think the download sites could be improved by being more focused on users. Where possible resources should be accessible to non-experts, and focused on making it easy for external users. As such, we recommend that data download sites should contain all of the following characteristics:

- **Classifications/ coding that focuses on making it easy for users:** We created the spreadsheet we have referenced throughout this report, because we could find few other resources that organised data by how it might be used. Code frames should be developed and applied based on the reasons people will be searching for data. Filtering just by format, license and very general themes wastes the potential of the data.

- **Clearer titles and better grouping:** Titles should give a clear idea of what the data covers, and allow differentiation between datasets. In some cases there will be many different datasets with very similar or even identical names. Either these should be grouped together, with explanations of how to search within the group. Or results should focus on the most important versions, and the less important ones could be linked to.

- **Clear descriptions:** Descriptions should sell the dataset and make it as easy as possible for users to generate value from it, or rule it out if applicable. They need to cover simple information on why the data was collected and when, what kind of software is needed to

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3 See, for example, Anna Powell-Smith’s blog on [using Land Registry INSPIRE polygons to look at ownership](#), or Robert Spiers’ blog on [using LIDAR for solar panel placement](#).
view it, and anything else that would be helpful. They should also highlight any obvious uses for the data, and any limitations users should be aware with. Ideally the formats of the descriptions should be consistent. Where appropriate, they should also link to other information that might help users understand how to make best use of the data. Where possible and useful, this could include tutorials for particular ways of using the data.

- **Clear instructions for downloading the data**: Some complexity is natural, for example multiple download formats or similar datasets. However it should be a lot simpler to find the correct download. Supporting materials should make the differences between possible downloads clear to the user. There should ideally be one button, or drop down menu, clearly labelled ‘Download’.

We do not pretend to be experts in government data, but it should not be this hard to access the information. If both we, and the data scientists we have worked with struggled with this, it needs work. At the very least the data should have a clear title, a clear description, and good version control. Preferably, the release process, or subsequent follow up work, should include a full audit of how the data is likely to be useful, with the answers informing the description and categorisation of the data.

**Existing platforms**

A sheet of our open spreadsheet is dedicated to [existing platforms for accessing information on land](#). This section focuses on just a few of these, that are all free-to-access and potentially valuable to common good land users.

**Magic Map**: This platform is maintained by Natural England. It contains a lot of the data released by various parts of Defra. It is probably the best platform we found for displaying open data on land. However it does not make it easy to find and view data that is likely to be useful.

**SoilScapes Viewer**: This platform is hosted by Cranfield Soil and Agrifood Institute, and combines various sources of data on soil, along with information on some of the implications of that data for growing. Cranfield offer more detailed information for those who pay.

**MyForest**: This is a free service from the Sylva foundation, designed to help people manage woodlands and link up with other projects. The user experience is tailored to different users, from woodland managers, to education providers, to those who just want to try it out. It focuses on enabling people to collect data on the sites they manage rather than providing them with data.

**Google Maps**: Most people are familiar with Google Maps and it provides a great way to get a quick overview of surrounding land, including some topographical data. It has not yet integrated much land data of the sort we are considering, but might be a good host for it in the future.
**OpenStreetMap**: An open source mapping project driven by citizen mappers. Again, it can provide an excellent overview, and could be a great host for data on things like field boundaries. It is unlikely to incorporate other land datasets that are not verifiable on the ground.

**LandShare.net**: This website provided an excellent service of linking those looking for land, with landowners willing it share it. Indeed, one of the common good land users we spoke to found their site using the resource. Sadly the website was shut down in early 2016.

**Gaps analysis**

Based on our analysis of user needs, available data, and current platforms, we think providing better access to information for common good land users requires a platform, or platforms, to fill the following gaps:

- None of the current platforms were designed with common good land users in mind, and indeed no one has catalogued their information needs until now. Users need a platform that understands and focuses on meeting their needs, and a process of development that actively engages them.

- Current platforms for accessing land data tend to display all available data, or group it in broad categories that make it hard to find required information. A user experience should guide different kinds of user to the data that is likely to be helpful to them.

- Land data is complex, and some platforms do not do enough to tell users how to interpret the data they present. Users need a platform that links data to information on why it is important, and how to understand and apply it.

- No current platform incorporates all the data we have identified as being of potential use to common good land users. Users need all the most valuable data from Defra and the other key sources we’ve identified here.

- At the moment users struggle to collect information from different places. Most information is available somewhere, but locating it is too arduous for most to even attempt. Whether it is by collecting everything in one place, or providing excellent signposting, users need a one space from which to access all the information they need.

Next, Chapter 4 will move on from this gaps analysis to introduce our suggestions on how to increase access to land data.
Chapter 4 - Opportunities for increasing access to land data

So far we have identified information needs, available data, and gaps in current provision of information. Now we will draw on all this, and the desires of the users and experts we consulted, to suggest the best ways to make land data more accessible to common good land users.

Findings from our interviews with common good land users

We asked common good land users how they would like to access information on land. Some key user requests included:

- **Online and map-based**: There was broad consensus that an online map-based platform would be the best way to get land data to users. Most users were comfortable using mapping platforms and accessing information online.
- **A ‘one-stop-shop’**: Users did not want to have to spend time identifying and moving between different sites. The ideal platform would provide all the information they need in one place.
- **Clear, attractive, simple presentation and user experience**: Users felt that a tool would only be useful where it didn’t demand too much of the user in terms of technical skills, knowledge, or time. A simple, intuitive, fun user experience would be key.
- **Educating the user**: A tool should guide users towards the information they are likely to need, and explain to them why it is important. Many users were not aware of what information exists, or specifically what they need and how to interpret it.
- **Clear messaging**: The platform should present a clear story about why people should use it. The data should tell a story about common good land use that they can identify with.
- **Development linked to user feedback**: The tool should be designed, developed, and updated based on user feedback, to ensure it focuses on real needs.
- **Supports the user**: The platform should have clear, comprehensive support materials and the potential for users to ask specific support questions.

Findings from the DataDive

We also learned a lot about potential platforms through a DataDive event we ran in collaboration with the charity DataKind UK, and Ecological Land Cooperative (ELC), a social enterprise which develops affordable agro-ecological smallholdings. This took place after we had completed most
of our research and provided an excellent opportunity to test out some of the ideas we had developed, and to engage directly with the data. It also allowed us to test some ways of increasing access to the data. The six week process involved:

1. **Working with DataKind UK to clarify what questions we wanted to answer using the data.** We decided that choosing a specific project to help would simplify the process, and offer a chance to prove the data could be useful. We chose ELC, as they are always looking for new sites. We decided the DataDive should explore whether land data could be employed to make this process easier.

2. **Working with our ‘Data Champions’ to develop a methodology for helping ELC.** For the six weeks leading up to the DataDive we worked with ELC and three volunteer data scientists to identify key datasets, figure out how to make them useable, and establish how they could help ELC find suitable sites.

3. **Bringing together 20 further volunteer data scientists to test ways of making the data useful.** On the day, we used about 20 datasets to explore various factors that influenced the desirability of new sites. This included things like price, soil quality, landscape, noise pollution, and climate. Volunteers used techniques like web scraping land for sale, natural language processing and machine learning for descriptions of farms, and creating a database to join together different datasets and make them accessible.

*What did we learn?*

**Open data could help ELC find land more easily.** At the DataDive we were able to (i) identify a shortlist of potential sites, (ii) compare different sites on a range of characteristics, and (iii) do some interesting analyses of the region in which we were looking. We think that if scaled, these outcomes would benefit other projects. It is reasonable to assume that if the data can help ELC, it should also be useful to other common good land users. Given the relatively small amount of labour involved in getting to this stage, it confirms this as a valuable area to pursue.

**Land data is complex to work with and interpret.** Despite working with extremely skilled data scientists, and consulting with experts in areas like land management, ecology and soil quality, we still struggled with the data. This was not unexpected - environmental assets are extremely complex, and careers are built around individual datasets. Some datasets are extremely large, and some contain errors or are poorly presented. This isn’t a revelation to anyone familiar with spatial data. However it is worth emphasising that making the most out of this data will require input from a variety of experts, and significant study of individual datasets. As discussed in Chapter 3 and the recommendations, data producers should help facilitate this process.

**A new online platform is feasible:** Volunteers were able to do something useful with almost all the datasets we provided for them. Relatively little work was needed to compile key datasets into
a database, and we identified no obvious barriers to scaling this up to a national, and more complex scale.

The most promising approach to increasing access was a ‘data gazetteer’. This involved compiling a database containing all the useful data, and linking it to polygons on a map. This allows the user to engage with specific pieces of land, and be shown all the data that relates to them. The approach is not perfect - especially as it involves several assumptions about what should be recorded to each polygon. However it provides a very intuitive way to explore data. Speaking with the data champions after the event, we decided that the best way forward would be to build on this basic prototype and get a Minimum Viable Product (MVP) online as soon as possible for testing.

What are the best ways of increasing access to information for common good land users?

With the above findings in mind, we think the following options could all play a role in increasing access to information on land. Each has its own strengths and weaknesses. They are not necessarily alternative paths, and could be complementary. If any reader is interested in pursuing any of these, please get in touch.

A new online platform

As mentioned above, we are most interested in developing a new online platform for increasing access to land data. There is significant demand for this amongst common good land users once they are made aware of the data that is out there. The potential benefits of developing such a platform far outweigh the likely costs of producing it.

Any new online platform should focus on producing an intuitive user experience, specifically targeted at common good land users. This might involve beginning the user experience with screening questions to determine what they are interested in, or another form of guiding them to the correct resources. This would also mean actively seeking feedback from every user as to the future direction of the resource.

The major strength of this approach would be the ability to create a database and user experience tailored to the needs of common good land users. Creating a dedicated platform could inspire new common good land users. It could also help redress the imbalance between common good land users and large land-based businesses - providing a resource that only the former could use. As with any new website, key problems would include developing a sustainable funding model, and convincing new users to sign up.
Since the DataDive we have developed new partnerships aimed at developing an MVP as soon as possible, and building a community of users, who can in turn inform the development.

Lobbying for features to be integrated into other online platforms

One way of overcoming the problems with developing a new platform would be to instead try and make another platform meet the needs of common good land users. Platforms like Google Maps, OpenStreetMap, or MAGIC Maps, already have significant user communities and established funding models. There are also a range of new map-based platforms on the horizon. Some particularly interesting examples are being incubated in the OS’s Geovation Hub. Collaboration with any or all of these organisations could help common good land users access better information. However these platforms would be unlikely to focus explicitly on the needs of common good land users, and thus would not meet them as clearly as a dedicated platform.

Creating a resource that signposts to existing platforms and guidance

Better access to information could be facilitated by signposting users to useful platforms and information. In our interviews, lack of awareness of what was already out there was widespread. Meanwhile some users reported that they could find most of the information they needed online, but that it took a prohibitive amount of time.

As discussed in Chapter 3, none of the existing platforms we encountered addressed all the needs of common good land users. However, several platforms could be useful for specific tasks. Users would also benefit from easy access to the many other kinds of resources that exist on the web, from policy guidance to literature on land management techniques.

One solution would be creating a central resource that exists to direct common good land users to information and platforms that could help them. This would greatly reduce the resources required to access at least some of the information they need. As a first step towards this, our open spreadsheet contains a worksheet detailing the land data platforms we came across in this research - please take a look and add to it if you know of another.

Creating a comprehensive signposting resource would probably require fairly few resources to develop and maintain in comparison to developing a new platform. However, since there are gaps in the data available on current platforms, and problems with their user experiences, it would not maximise the value of the data. It is also absolutely possible, that a new platform for accessing land data could integrate a signposting feature, creating a one-stop-shop for information on land.
A competition fund

Competition funding could help kickstart projects aimed at meeting the information needs of common good land users. This would involve an individual or organisation instigating a challenge aimed at meeting the needs of common good land users, and then funding the winner to develop their solution. This could have benefits beyond whatever the winner produced, as it would also draw further interest to the area, and some projects might find other support to continue. The Geovation Challenge is a good example of this approach, running a new challenge every year to inspire innovative uses of geographic information and technologies.

Lobbying government and other data producers

Regardless of how new resources for accessing information develop, there is work to be done convincing data producers to make more of their data accessible. Key data resources like the Land Registry, the Rural Land Register, and the most detailed Ordnance Survey maps, are still totally unavailable, or too expensive to use for some purposes. There is also work to be done on lobbying for greater resources to be allocated to making data accessible to those who want to use it for public benefit. Simply releasing the data means it can be used by those who have the resources to exploit it, but does little for smaller organisations.

Funding access to information for common good land users

Unfortunately all of the potential benefits we’ve identified will be of little value if future work in this area can not secure funding. While we think the benefit-cost ratio would be high for providing access to this data, there are still significant costs associated with setting up and maintaining an accessible platform. In our interviews we asked users about their willingness and ability to pay. We also talked about alternative funding models with funders and other experts.

Willingness and ability of users to pay for access

Most users expressed a willingness to pay for a service, if it delivered the information they needed. The amounts suggested ranged anywhere from a one off payment of £50, to a monthly subscription of £20, to significantly higher sums for a service that would save a lot of money for the user (e.g. removing the need for particularly expensive surveys).

Most common good land users run projects with extremely tight budgets. Accordingly, there was a consistent view that users would need to be convinced of the value of the platform before they parted with their money. The amount they’d pay would be closely linked to their perception of the savings a subscription could offer. This suggests that any model would have to offer at least a
free tier, and that a user-funded business model might only be realistic if the tool is able to
convince users it can solve specific, costly issues.

Other possible sources of funding for increasing access to information on land

Given that most common good land users do not have large amounts of money, at least a portion
of the funding for getting them better information may have to come from elsewhere. Some
options include:

- **Central government departments (especially Defra):** Support could come in the form of
  funding, but also in the gifting of staff time to assist with the attempts. Even where they
  are not mandated to support common good land users *per se*, they are likely to have
  objectives around supporting good environmental management and social value - things
  that better access to information could facilitate. Moreover, supporting other projects may
  be cheaper than maintaining dedicated online platforms themselves.

- **Local government:** As with central government, it could help meet their strategic
  objectives, and help them avoid funding internal data projects. One possibility might be a
  platform that offers a free tier nationally, with individual local authorities paying for local
  data to be integrated in their areas. A platform might also provide valuable services, like
  hosting local authority assets registers, or hosting and displaying planning applications for
  the local planning authority.

- **Charitable Foundations:** Increasing access to information for common good land users is
  primarily about creating social and environmental value, and about helping groups that
  operate in very marginal industries. This project was generously supported by the Peter
  Sowerby Foundation, and it may be that future work in this area will also require at least a
degree of charitable funding.
Conclusion and recommendations

This project set out to test our hypothesis that land data could help the common good land users we support, and to identify ways in which that could happen. This report has confirmed that hypothesis, and presented the information needs of these users, the data that is available, and the best ways in which it could be made more accessible to them.

Our next steps will be to continue pushing for users’ information needs to be taken into account, and to pursue the development of a new online platform and other resources. Please get in touch if you are interested in this work or have any ideas for developing it.

In the next decade we want to see a situation where common good land users can access all the information they need easily and cheaply. This would help them run more sustainable businesses, and would create huge benefits for society and the environment. With that ambition in mind, we now conclude the report by listing some recommendations for the key stakeholders regarding their roles in getting us there.

Common good land users

If users don’t speak up then their views will not be taken into account. Before we started this project there was very little information out there about what kind of data releases might be useful to common good land users. This is only going to change if users learn about the data that is or could be available, and make their voices heard. Thanks to everyone who spoke to us as part of this project. If you are interested in what you’ve read here check out our website for more information, or get in touch if you have any suggestions or questions. We’re committed to ensuring your voices are heard moving forward.

Government and other data producers

Some areas of government have made good progress in opening up their data, with Defra at the forefront. However there is much more to be released and much more to be made accessible:

- **Land data should be open by default**: unless there is an extremely good reason not to release data it should be released as open data, for everyone to use. Priorities for releasing existing land-based datasets should be based not just on market demand, but also what will best help users deliver social and environmental outcomes. Where there is a loss of revenue as a result of opening up datasets, government should be prepared to
cover this, bearing in mind the huge economic gains associated with opening up data. Particular priorities should be:

- **Land Registry ownership records**: ownership information is a key need for common good land users and there are many other reasons to pursue this, as we discussed at length in our submission to the recent consultation on privatising the Land Registry. A comprehensive and transparent register of land ownership and options should be a priority.

- **The Rural Land Register / Land Management System** (Defra / RPA): This dataset was created to manage the payment of European agricultural subsidies. It contains a range of information useful to users. Furthermore the public have a right to know who is claiming public subsidies, where, and for what.

- **Ordnance Survey data**: Whilst the OS releases some open data already, it still employs restrictive conditions on the use of some of its maps. This is a particular problem as OS maps are the basis for presenting many other datasets. Open release is not the only solution, but less restrictive licensing conditions are essential to unlocking innovation.

- **Take steps to make data accessible, especially to common good users**: Data release can’t just mean uploading something on data.gov.uk or similar websites. Instead resources must be dedicated to making data accessible for people who want to use it to create public benefits:
  
  - Audit and improve past open data releases to make them focus on being accessible to, and helping users. We discussed this at greater length in Chapter 3, but at a basic level it means better organisation, presentation, and descriptions.
  
  - Develop new protocols and templates for ensuring that future open data releases meet basic standards of accessibility. This process may require more resources, but the added value involved makes it good value.
  
  - Funding should be available internally and externally for projects aimed at making data more accessible. This might mean funding Shared Assets or others to develop a new online platform, or it might mean developing MAGIC maps or another service.
  
  - Actively engage users who will use data for public benefit, sponsoring their involvement if necessary. Recognise common good land users as a specific user
group and think about them when planning releases of land data and when designing future data collection

Data scientists and developers

In some ways Shared Assets is a strange organisation to be doing this work - our focus is on models of land management, not open data. However the problem was that no one else was looking at how this data could be used by the kinds of land managers we strive to help. We hope this report will inspire more developers to get involved in this area - here are some suggestions:

- **Get involved in ‘data for good’ projects:** We had an incredible experience working with [DataKind UK](https://www.datakinduk.org/) and their amazing data scientist volunteers. There is very little understanding about the potential of data amongst the groups we interact with, or the third sector more generally. Open data, and the open data community can be alienating to those without specialist expertise, meaning people don’t get heard. These kind of projects, and organisations like DataKind UK, can play a big role in changing this.

- **Develop or adapt an online platform to meet the needs of common good land users:** This report has provided the evidence needed to pursue this, now it just needs the funding and expertise required to get something up and running.

- **Revive landshare.net:** [Landshare.net](https://landshare.net/) was a great resource that matched common good land users looking for land with landowners willing to give them access to their land. Despite securing 75,000 users, updates slowed, and it was eventually taken down earlier in 2016. This resource, or another like it, would benefit common good land users.

Funders

Charitable foundations and other funders need to recognise the potential social and environmental value of supporting increased access to information on land. The raw materials (in the form of open datasets) are largely already available and free to use, meaning that high impact could be achieved for relatively low outlays. Building a new information infrastructure could be relatively cheap, yet offer huge benefits to a wide range of users. Funders should:

- Support projects that are helping the third sector make the most out of open data
- Encourage applicants to include subscriptions to information platforms in their bids
- Run competitions to inspire the development of new ways of increasing access to information