

HM Government Land Use Consultation

January 2025

Consultation questions

You should read the full call for evidence and review the guidance for respondents (above in this document) before completing your response.

1. To what extent do you agree or disagree with our assessment of the scale and type of land use change needed, as set out in this consultation and the Analytical Annex?

[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / I don't know]

Please explain your response, including your views on the potential scale of change and the type of change needed, including any specific types of change.

N/A

2. Do you agree or disagree with the land use principles proposed?

[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / I don't know]

Please provide any reasons for your response including any changes you believe should be made.

N/A

3. Beyond Government departments in England, which other decision makers do you think would benefit from applying these principles?

- Combined and local authorities (including local planning authorities)
- Landowners and land managers (including environmental and heritage groups)
- Others (please specify)

There may be a number of other decision makers and stakeholders that would benefit from applying these principles. In the context of this consultation, it is important to highlight that land use also extends to and impacts on the subsurface (i.e. soils and rocks beneath the surface that provide groundwater and other important ecosystem services, and also determine the prevailing ground conditions and hence influence the cost of building works). Therefore, it is important to also consider stakeholders with an interest in / regulatory remit for the subsurface as well as those responsible for surface changes to land use change. Such stakeholders might include water companies, responsible for the provision of water and sewerage services to new homes, construction companies and developers, who are building the houses and connecting services, as well as the transport network agencies such as Network Rail and Highways England,

responsible for connecting the new developments to existing transport networks. Another key group are regulators such as the Environment Agency who are responsible for a range of relevant issues related to land use and their impacts on environmental status of soils, rivers and groundwater. Other important stakeholders are the Mining Planning Authorities who are responsible for managing aggregate resources and balancing national and local supply needs with the need to minimise environmental damage; they should be informed at an early stage of what is being planned and where.

4. What are the policies, incentives and other changes that are needed to support decision makers in the agricultural sector to deliver this scale of land use change, while considering the importance of food production?

Agricultural practices also impact on the atmosphere and geosphere. Hence, when planning land use changes, a 3D view should be taken that incorporates consideration of the subsurface. Any intensification of the agricultural sector and incentives linked to this should consider the potential impacts on groundwater (quantity and quality) and the wider environment. Consideration of the subsurface is important to achieve the anticipated outcomes, including when designing incentives, such as green infrastructure and natural flood management schemes, which could have opposing impacts depending on the geology/ground properties. For example, rerouting water pathways to reduce flooding (positive impact) could also have negative impacts, such as causing scour (erosion of soil and rock), landslides and surface water ponding (waterlogging) and resulting structural damage to buildings due to subsidence and/or the swelling and shrinking of clay soils.

5. How could Government support more land managers to implement multifunctional land uses that deliver a wider range of benefits, such as agroforestry systems with trees within pasture or arable fields?

N/A

6. What should the Government consider in identifying suitable locations for spatially targeted incentives?

It will be important to consider several subsurface and geological issues when considering and identifying suitable locations. Considerations should include but not be limited to issues of i) long term water security in specific locations and potential inter and intra basin water transfers required to meet demands, ii) potential for sterilisation of (i.e. by preventing future access to) critical subsurface space or resources (e.g. minerals, groundwater, subsurface gas storage etc), iii) potential geohazards such as surface slope stability e.g. landslides, soil shrinking/swelling that could cause building subsidence, natural dissolution (erosion of soluble rocks e.g. gypsum, limestone) and pose a risk of surface collapse, flooding risks including from groundwater flooding, radon risks in homes from natural geological sources iv) potential impacts on the environment due to transport and infrastructure (e.g. impacts on flooding, water quality, contamination, changes in subsurface temperature (geothermal) conditions).

Other anthropogenic impacts on the subsurface to consider include past and future underground mining (coal, but also other mined commodities such as metals, building stone, gypsum), potential land contamination, and risk of encountering areas of made and/or worked ground (landfills, spoil tips, old quarries etc).

7. What approach(es) could most effectively support land managers and the agricultural sector to steer land use changes to where they can deliver greater potential benefits and lower trade-offs?

N/A

8. In addition to promoting multifunctional land uses and spatially targeting land use change incentives, what more could be done by Government or others to reduce the risk that we displace more food production and environmental impacts abroad? Please give details for your answer.

- Monitoring land use change or production on agricultural land
- Accounting for displaced food production impacts in project **appraisals**
- Protecting the best agricultural land from permanent land use changes
- Other (please specify)

N/A

9. What should Government consider in increasing private investment towards appropriate land use changes?

N/A

10. What changes are needed to accelerate 30by30 delivery, including by enabling Protected Landscapes to contribute more? Please provide any specific suggestions.

- Strengthened Protected Landscapes legislation (around governance and regulations or duties on key actors) with a greater focus on nature
- Tools: such as greater alignment of existing Defra schemes with the 30by30 criteria²³
- Resources: such as funding or guidance for those managing Protected Landscapes for nature
- Other (please specify)

N/A

11. What approaches could cost-effectively support nature and food production in urban landscapes and on land managed for recreation?

We encourage approaches that consider the subsurface (geology/ground conditions) in conjunction with surface land uses to identify the most suitable opportunities and create frameworks for users to consistently assess and apply criteria for optimal land uses. Such approaches are most cost-effective when the subsurface (soil and ground conditions) are considered at an early-stage. For example:

- The value of geological data is highest at the outset of a project when the cost implications of design change are lowest and potential for efficiency savings are highest. There are instances where suitability of sustainable drainage schemes (SuDS) have been considered after housing plans have been conceived. As a result, the number of planned houses had to be reduced to make space for the SuDS, thereby lowering the potential return

on investment. Early-stage consideration of infiltration SuDS could reduce such risks.

- The multiple benefits of nature-based solutions (e.g. SuDS; flood management) and the social value of the subsurface (e.g. flood risk reduction; access to green space and geoheritage sites; land quality and bio-accessibility impacts on public health) should be considered when assessing cost-effectiveness e.g. as outlined in [bitc multiple benefits of suds in schools 2017.pdf](#)

12. How can Government ensure that development and infrastructure spatial plans take advantage of potential co-benefits and manage trade-offs?

As the UK's National Geological Survey, we focus on research and data collections related to the subsurface and its use for infrastructure, building and energy projects as well as for utilisation of its resources. In this role, we note that consideration of land surface and above ground planning are well established, while planning of subsurface space use and its benefits are less well coordinated and considered. At the same time we see an increased interest in and use of the subsurface, e.g for buildings (basements, tunnels, utilities), energy provision (ground source heat pumps), storage (CO₂, energy and waste) and resources (water, heat, minerals). These subsurface uses offer both, potential co-benefits as well as potential trade-offs, and should be considered in development and infrastructure spatial plans.

We hence recommend government to consider how subsurface (below-ground) space can be better incorporated into development and infrastructure spatial plans. Some countries, such as Finland, have bespoke subsurface master plans to safeguard land below ground for national significant infrastructure. A possible option for the UK could be to incorporate subsurface land uses (e.g. for net zero technologies and transport) into the revised National Policy Statements for Nationally Significant Infrastructure Projects (NSIPs) as well as in relevant spatial plans (e.g. Energy Spatial Plan).

There is an opportunity for alignment between planning regulations and environmental regulations to ensure there are no gaps/conflicts e.g. related to technologies which to date are not fully covered by either regulations, such as ground source heat pumps.

There is also an opportunity for maximising the value (benefits) of existing data and knowledge captured during the design and construction of new development and infrastructure projects, especially where this data has been collected using public funding. For example, all construction projects gather detailed information about the soil, rock, chemistry and groundwater conditions at construction sites (collectively referred to as Ground Investigation (GI) data) that form the foundations of the local and national understanding of the subsurface geology.

Our research has indicated that access to such data has the potential to significantly reduce the costs for construction projects and, in particular, to reduce unexpected costs arising from unforeseen ground conditions (estimated to be in excess of £13Bn per year). As the National Geological Survey, we receive a small proportion (<20%) of this data (shared with us voluntarily) and make them openly

available. Mandating sharing of such data through an obligatory open access sharing mechanism would benefit many areas including street works coordination; urban development; urban heat networks, underground space use; utilities maintenance, and; resilience planning (including flood risk) amongst others.

Shared data will help reduce risks and costs associated with unforeseen ground conditions and identify and alleviate potential geohazards. Such data sharing could deliver a wide range of co-benefits, including time and cost savings through more targeted ground investigation and reducing the environmental impact of extensive ground investigations. It would enable early-decision making prior to the commissioning of further ground investigations, thereby facilitate more robust business case, project financing and design/planning decisions and also support better risk management.

13. How can local authorities and Government better take account of land use opportunities in transport planning?

Land use opportunities for new transport infrastructure should consider the subsurface, including ground conditions and potential geohazards which are relevant in both the development and long-term asset management phases. Consideration of these would enable cost savings and reduce risks of project failure and should include a forward view of the potential long-term impacts of climate change on the subsurface and geohazard risks. In addition, considering the available natural resources would help to safeguard mineral and water resources.

14. How can Government support closer coordination across plans and strategies for different sectors and outcomes at the local and regional level?

N/A

15. Would including additional major landowners and land managers in the Adaptation Reporting Power process (see above) support adaptation knowledge sharing? Please give any reasons or alternative suggestions
[Yes / No / I don't know]

N/A

16. Below is a list of activities the Government could implement to support landowners, land managers, and communities to understand and prepare for the impacts of climate change. Please select the activities you think should be prioritised and give any reasons for your answer, or specific approaches you would like to see.

- Providing better information on local climate impacts to inform local decision making and strategies (for example, translating UK Climate
- Projections into what these mean in terms of on-the-ground impacts on farming, buildings, communities and nature)
- Providing improved tools and guidance for turning climate information into tangible actions (for example, how to produce an adaptation plan for different sectors)

- Developing and sharing clearer objectives and resilience standards (for example, a clear picture and standards of good practice for each sector under a 2°C climate scenario)
- Supporting the right actions in the right places in a changing climate (for example, prioritising incentives for sustainable land uses where they will be most resilient to climate change)
- Other (please specify)

N/A

17. What changes to how Government's spatial data is presented or shared could increase its value in decision making and make it more accessible?

- Updating existing Government tools, apps, portals or websites
- Changes to support use through private sector tools, apps or websites
- Bringing data from different sectors together into common portals or maps
- Increasing consistency across spatial and land datasets
- More explanation or support for using existing tools, apps or websites
- Greater use of geospatial indicators such as Unique Property Reference Numbers (UPRNs) and INSPIRE IDs to allow data to be more easily displayed on a map
- Other (please specify)

As a world-leading geological survey and the national centre of geological data and information the British Geological Survey (BGS) holds several key geospatial datasets that could further improve decision making in land use planning as discussed in this consultation, including:

Geohazards datasets: e.g. **GeoSure** (ground stability hazards prevalent across GB), **mining hazards** (non-coal), **GeoScour** (river erosion), **GeoCoast** (coastal erosion, flooding, subsidence), **groundwater flooding**, **property subsidence assessment**.

Urban planning datasets: e.g. **Civils** (engineering properties of the ground for any civil engineering development), **infiltration SUDS map** (opportunities and limitations for infiltration), **Radon potential**, **Britpits** (database of British pits), **GeoClimate** (impact of climate change on subsidence hazard), **GeoSure**, **Resistivity** (for energy infrastructure and EV charging etc), **mineral resources**, **UK topsoil geochemistry**.

Groundwater resources datasets: e.g. Hydrogeology maps Scotland, aquifer designation maps, groundwater vulnerability.

As an organisation dealing with a wide range of geo/spatial data we fully recognise the need for increased consistency across data sets. In our experience, suitable and useful data is often disparate in nature, of varying quality, in different formats and available under different licensing conditions as it currently crosscuts different sectors and providers. BGS activities aimed at improving this situation include providing User Guides and Product Information Notes with data to provide additional support for users. In our experience, inclusion of such details and

setting minimum baseline data standards could support data consistency and the use of multi-sectoral data sources.

The availability of geospatial datasets which extend beyond the soil zone to deeper geological units could increase the value of currently available data sets for decision making and planning and improve the outcomes of the changes outlined in this consultation.

Having good/detailed metadata attached to all datasets is important, including detail time stamp info. Determining suitable quality is difficult and maybe only fully understood by the provider. Therefore, it is important that the metadata detail sources of info, dates, etc. that allows the user to at least understand what and how it was captured.

We fully support greater use of, and better information related to UPRNs. BGS are currently working to provide our data via UPRNs. A baseline has now been established and is being utilised across multiple sectors. Use of UUID/GUID within datasets would also be useful especially when combining multiple datasets from different sources and managing/tracking updates and changes. Again, a minimum standard should be applied consistently across all data providers.

18. What improvements could be made to how spatial data is captured, managed, or used to support land use decisions in the following sectors? Please give any reasons for your answer or specific suggestions.

- Development and planning: such as environmental survey data
- Farming: such as supply chain data and carbon or nature baseline measurements
- Environment and forestry: such as local and volunteer-collected environmental records
- Recreation and access: such as accessible land and route data
- Government-published land and agricultural statistics

Land use decisions should consider the subsurface, including the geological properties/characteristics of the underlying formations, including the potential for geohazards, as well as the available natural resources e.g. groundwater and minerals. Changes in land use at one site can impact useability at other sites due to changes in groundwater flow / quantity and quality, surface runoff or potential contamination. To make good quality, reasoned, evidence-based decisions on land use, better quality subsurface data is required.

This includes the acquisition, sharing and management of ground investigation data for the common good. As outlined in response to question 12 (text repeated here) all construction projects gather detailed information about the soil, rock, chemistry and groundwater conditions at construction sites (collectively referred to as Ground Investigation (GI) data) that form the foundations of the local and national understanding of the subsurface geology.

As previously stated (Q12) our research has indicated that access to such data has the potential to significantly reduce the costs for construction projects and, in particular, to reduce unexpected costs arising from unforeseen ground conditions (estimated to be in excess of £13Bn per year). As the National Geological Survey,

we receive a small proportion (<20%) of this data (shared with us voluntarily) and make them openly available. Mandating sharing of such data through an obligatory open access sharing mechanism would benefit many areas including street works coordination; urban development; urban heat networks, underground space use; utilities maintenance, and; resilience planning (including flood risk) amongst others.

Shared data will help reduce risks and costs associated with unforeseen ground conditions and identify and alleviate potential geohazards. Sharing of a wider set of captured data and updates including geophysical surveys, model observations or monitoring (e.g. using Earth Observation satellites) could realise larger benefits and value. Where open data sharing is not considered appropriate, providing such data to government/ public offices (such as the national geological survey) for internal use has shown to generate benefits in countries like Germany and the Netherlands where the sharing of geological data of all kinds is mandated and has enabled the geological surveys to provide better geological maps and models, thereby adding value to the wider economy. Key to the success of data sharing in these countries are an underpinning legal mandate and funding as well as the availability of agreed data formats and metadata standards.

19. What improvements are needed to the quality, availability and accessibility of Agricultural Land Classification (ALC) data to support effective land use decisions?

N/A

20. Which sources of spatial data should Government consider making free or easier to access, including via open licensing, to increase their potential benefit?

N/A

21. What gaps in land management capacity or skills do you anticipate as part of the land use transition? Please include any suggestions to address these gaps.

- Development and planning
- Farming
- Environment and forestry
- Recreation and access
- Other (please specify)

N/A

22. How could the sharing of best practice in innovative land use practices and management be improved?

N/A

23. Should a Land Use Framework for England be updated periodically, and if so, how frequently should this occur?

- Yes, every 5 years
- Yes, every 3 years
- Yes, another frequency or approach. Please provide details.
- No
- I don't know

N/A

24. To what extent do you agree or disagree with the proposed areas above?
Please include comments or suggestions with your answer.

[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree
/ I don't know]

N/A