

## Centre for Science and Policy

# Policy stakeholder visit to the Centre for Landscape Regeneration



## Event report

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# Introduction

In April 2023, the [Centre for Science and Policy](#), in conjunction with [the Cambridge Zero Policy Forum](#) and the [Centre for Landscape Regeneration \(CLR\)](#), ran a policy stakeholder visit to CLR, addressing the challenges and trade-offs associated with land use in the Cambridgeshire Fens.

This event brought together key academic, policy, third sector and business stakeholders to discuss the CLR's engagement and collaboration with strategic partners, and to learn about the issues and questions facing policy decision making in the Fens. This interdisciplinary event brought together different viewpoints and themes, and enabled information sharing and networking, with the aim of fostering long term collaborations between the CLR, policy makers and other stakeholders.

The event included roundtables focusing on three topics:

- Trade-offs in land use planning: water, greenhouse gases and farming
- Trade-offs in land use planning: farming, biodiversity, and people
- CLR case study of peatland restoration, including the importance of multidisciplinary work with strategic partners

The event highlighted the importance of learning together and fostering connections between stakeholders. Emphasis was placed on understanding not only how government departments can deliver on net zero targets, but also how we may collectively improve efforts through a whole-systems approach, considering the intersections between policy, action, and public participation. As Cambridgeshire faces many challenges, it is an excellent case study for understanding the interplay between issues and the need to take a holistic approach.

This report provides a summary of key issues highlighted during the event.

## Background: protecting the Fens

Drained peat provides some of the UK's most fertile soil, and the East Anglian Fens contain almost 25% of all the lowland peat in England and Wales. Megan Hudson from Fenland SOIL highlighted the importance of the Fens for both agriculture and the UK economy, as it accounts for 7% of the UK's agricultural production despite only representing 4% of the total landmass.

Furthermore, half of all Grade 1 farmland in England is found in the Fens and the area produces 22% of England's crop output and 35% of its vegetable production. Half of UK-grown lettuce and more than 75% of UK-grown celery is from the Fens, alongside other vegetable crops, such as carrots, leeks, potatoes, onions, and beetroot. Farming and associated businesses contribute more than £3billion to

the rural economy and 80,000 people are employed in the wider food supply chain linked to the Fens, in a region that has high unemployment and deprivation. Yet the Fens face several environmental challenges.

For one, it is estimated that only 1% of the Fens' original wetlands remain intact and that it has lost 30% of its peatlands, emitting millions of tonnes of carbon in the process. The region is projected to run out of water in 5 to 10 years, whilst simultaneously being threatened by rising sea levels. With agriculture in the region being of such vital importance to both the local community and the UK, there is no simple option to resolving the challenges faced by the region.

Stakeholders – including researchers, policy makers, as well as others such as internal drainage boards, as environmental NGOs, communities and organisations such as Anglian Water and the Food Farming and Countryside Commission -- are therefore working to find the best ways of managing the Fens as a working landscape by developing a holistic approach to reconcile food production, reduce carbon emissions, manage water resources and flood risk, enrich biodiversity, and improve resilience, while ensuring the views of those who live and work in the Fens are integral to the conversation.

### The Centre for Landscape Regeneration (CLR)

The CLR is a collaboration of UK academics and researchers seeking solutions to the challenges of climate change, food security, water resource management, and biodiversity loss. It is a five-year programme, funded by the Natural Environment Research Council (NERC), with work beginning in the Cambridgeshire Fens integrating the expertise of partners with long-standing knowledge of the landscape: NIAB (National Institute of Agricultural Botany), the UK Centre for Hydrology and Ecology (UKCEH) and the RSPB (Royal Society for the Protection of Birds). The CLR has plans to expand the research to the landscapes of the Cairngorms and Cumbria in the coming years.

In the Fens, the CLR hopes to address issues such as land use change, water and food security, biodiversity, and management of different ecosystems. The CLR encourages all those who see themselves as stakeholders in these landscapes to be involved, and to have their voices heard.

### Challenges facing the Fens

Professor Lynn Dicks (CLR) discussed the current state of biodiversity in the Fenlands of Cambridgeshire. The Fens are an incredibly rich landscape with some of the UK's most precious biodiversity, including species such as the yellow loosestrife bee (*Macropis europaea*). Conserving unique species and the broader Fenland biodiversity is vital, but unfortunately, biodiversity in the Fens has been reduced to marginal regions. The CLR is working with farmers, landowners, and nature

reserves to understand how biodiversity, including mammals, birds, and insects respond to land management and land use.

Participants discussed the distinct characteristics and complexity of the Fenlands. They highlighted that Fenland habitats are diverse and influenced by long-standing geological factors, emphasising the need to consider the heterogeneity of landscapes. Participants suggested that different interventions should therefore be tailored to different areas based on their characteristics.

## Roundtable discussions

### Smart use of the Fenlands

The so-called “impossible question” was raised of how much cultivated land is required in the Fens for food production versus how much intact habitat is required to support stable wildlife populations and ecosystem services. In achieving goals for biodiversity, climate, water management, and recreation, some evidence suggests that an optimum of 30-35% of the Fens should be under natural habitat, with 25% under low yield farming tailored towards carbon retention and biodiversity, and the remainder under high yield production. This would be no easy task, with barriers including the financial impacts on producers, as well as the extensive human influence that the landscape has already received. It was suggested that the only way to square the circle is to obtain more land, depending on how much land currently under cultivation is needed for food production, rather than biofuel crops or animal feed.

An additional consideration is how biodiversity values have changed over time in the Fens. If what is considered good for biodiversity now is not necessarily the same as in the past, how does historic evidence fit with current scenarios? The dynamic nature and diverse mosaic of habitats of the Fens was emphasised. However, natural succession processes have been halted by extensive cultivation of the land for food production. Actions like rewetting the land restarts the natural succession process. The goal in the Fens might therefore be to reinstate a mosaic of habitats across the landscape, allowing some of it to pass through a natural cycle of succession.

It was argued that multifunctional landscapes are unlikely to be the answer to issues of biodiversity conservation and food production in the Fens as space is too constricted. It is likely that modelling these trade-offs will show that it is not possible to reach all goals with a land sharing approach. As such, it was suggested that we might focus on expanding intact habitats across the Fens, as opposed to smaller, highly connected habitats. Larger areas of intact habitat for nature will solve many of the

issues for biodiversity, while also inherently improving landscape connectivity. This issue is of particular concern in the Fens as biodiversity sites are fragmented and dispersed.

It was noted that the challenges of habitat fragmentation have not yet been resolved and that it is important to think strategically about actions for nature at landscape scale, as opposed to actions within fragmented areas alone. Local nature recovery strategies (LNRS) are working to improve landscape connectivity in the Fens, offering support for this strategic thinking. Nevertheless, most wetland species have now adapted to flourishing in fragmentary habitats.

Concerns were also raised that policy approaches may be moving in the wrong direction, focusing too strongly on carbon emissions. It was argued that building healthy, functioning landscapes would naturally present carbon benefits. Additionally, it was suggested that there is value in entities, such as supermarkets, looking beyond net carbon goals. Other actions must be taken, including to benefit biodiversity, and not just as additions to meeting net zero targets. Yet, it was also recognised that customer purchasing behaviour is in part driven by carbon emissions.

### Planning for future flood risk

There was an extensive conversation about flood risk in the Fens and the work that relevant agencies are doing to mitigate these risks, particularly by Future Fens as part of the Fens 2100 programme. The distinction between fluvial and marine flood risk was emphasised, as marine incursion is associated with sea level rise due to climate change. This represents an existential risk to the Fens and its prevention is likely to require expensive solutions. Each river catchment area in the Fens will need its own detailed plans and these plans will be informed by other goals for future Fenland management.

It was emphasised that planning for future flood defences should not just focus on avoiding damages but also on how to make infrastructure developments as cost-effective as possible. Making effective plans will require drawing on scientific evidence, as well as local knowledge and a recognition of the unknowns involved. Flood defence planning is taking place at a similar scale in other catchments, including the Thames Estuary and the Humber Catchment.

The discussion subsequently considered the financial aspects of flood planning. Until evidence-backed options are clearly delineated, it cannot be exactly quantified how much investment is needed. Nevertheless, both public and private sector investment are expected to play a significant role.

### Collecting and sharing data

The development of a Cambridgeshire Land Use Framework was discussed, and particularly around potential data sharing and visualisation solutions which may help to inform future planning in the Fens. A comprehensive platform for sharing and viewing geospatial data could be beneficial to many

stakeholders including government departments, local organisations, and members of the public. Pilots of a browser-based tool are in development by the Food, Farming and Countryside Commission with the support of the Geospatial Commission, with a broader aim of developing such platforms across the country. An example of this platform is shown below.

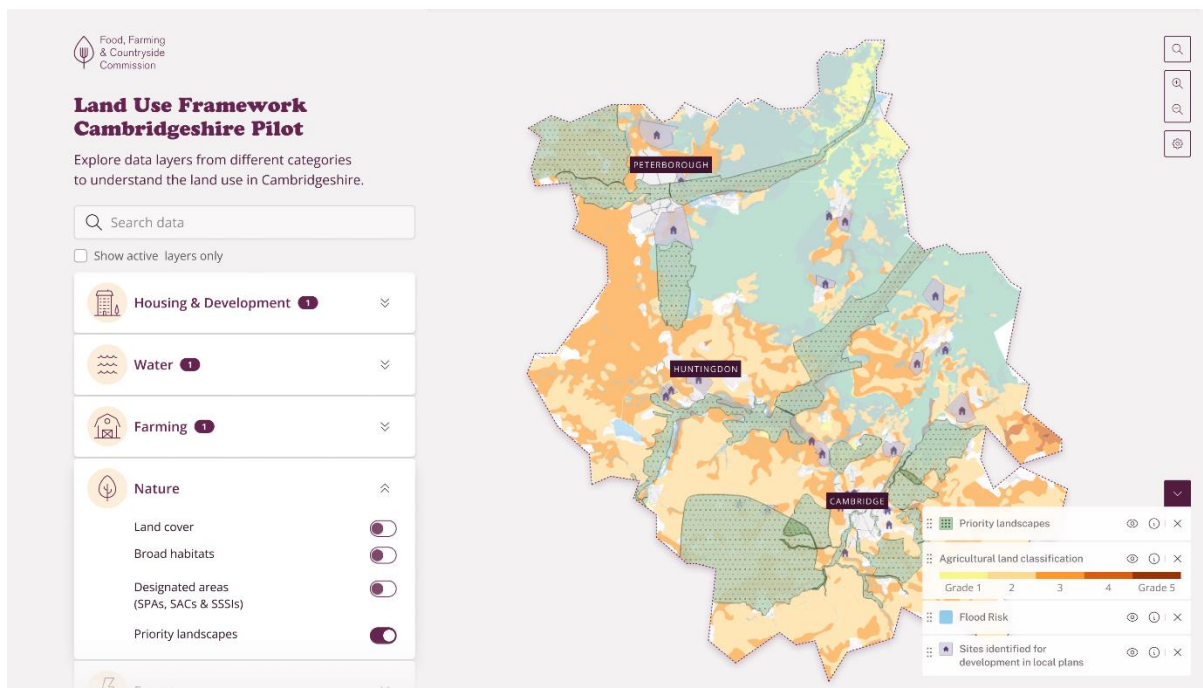


Image credit: Vizzuality and the Food, Farming and Countryside Commission

This tool must bring together datasets not normally viewed side by side to facilitate more informed decision making. Cambridgeshire is a county where such data sharing has the potential to help tackle several local challenges including the depletion of nature, sustainable water management and economic deprivation. Questions were raised about the target audience for the platform, which is an issue requiring further consideration and refinement.

Questions were also raised about which datasets ought to be included in the online tool and how the limitations of those datasets can be communicated to users. For example, the spatial resolution of the geospatial dataset is a limitation of such a tool; lower resolution datasets may conflict with local knowledge and have limited usefulness for local decision making, but may still have a valuable role in broader strategic planning. There is also no universally accepted land use classification for the UK, although it was suggested that the National Planning Policy system might be an option.

The degree to which disparate datasets can be easily interpreted was also raised, especially regarding Natural Cambridgeshire's 'priority landscapes.' Without more information, it is hard to understand what these areas represent, and the term 'priority' may raise objections from some stakeholders.

Participants highlighted the importance of openness in sharing knowledge and data related to land management practices. The need for accuracy in modelling and reporting and ensuring that decisions are based on reliable information was also stressed. This is taking account of the dynamic nature of land management, with plans needing to be adaptable to uncertainties and changing circumstances.

### A changing social and cultural landscape

Since 2020 there have been many policy changes that have brought uncertainty and risk to landowners and the public. Many aspects of a local area might form part of local people's culture and heritage including buildings and landmarks, but also local wildlife and plants. Thus, it is important to consider how communities absorb new information and adapt to policy shifts. Transitioning from 2020 to 2027, it is vital we identify the early adopters of new incentivised schemes, such as Environmental Land Management Schemes (ELMS), but also who is not adopting these changes and why.

Participants discussed the possibility of making better assessments of the heritage impacts of developments or land use changes. Such assessments would give people affected a chance to raise issues such as concerns for local biodiversity, mental health, and access to green spaces in their communities. In some cases, new developments may employ mitigating measures to reduce their local heritage impact. It was recognised that, as it stands, local people can feel ignored or undervalued in planning for their local environment. Recognition was given to the different goals of peatland restoration and the diverse values stakeholders have in the Fenslands. Indeed, perceived vested interests and how these may influence developer proposals, planning decisions, political representations and land use generally are frequently reported by local people as issues of concern.

It was also emphasised by participants that groups such as farmers cannot be treated as a monolith. Farmers include people with a range of attitudes towards the future of the Fens. Farmers in the Fens also work within a variety of land ownership structures, including small holdings, tenant farmers, and large farm businesses. Knowing what farmers require from peatland restoration is vital to understanding how values cluster within local communities and interact across the landscape. The values of the Fens are heavily engrained in culture, which is no more static than land use itself.

### Co-production of knowledge and outreach

Participants shared case studies of how stakeholders are focusing on engaging with policy. For example, NIAB (one of the largest crop science research institutes in the UK) is working to bridge the gap between scientific discovery and practical on-farm engagement. Their work with the Cambridgeshire and Peterborough Combined Authority and Fenland SOIL includes pilot projects to facilitate better dialogue and information sharing among farmers. They developed a simplified key for discussing soils and created maps based on farmers' input, integrating different names of soil types.



So far, 25 farms have taken part in this soil mapping exercise. The exercise was part of the Discovery Grant project (£90k) and it is estimated that the cost of doing similarly for the as yet unmapped soil on farmed land will be £2.2 million. The maps produced so far cover a significant area of the Fenlands and include information on soil types, water management, and productivity. An example of this type of map is below.

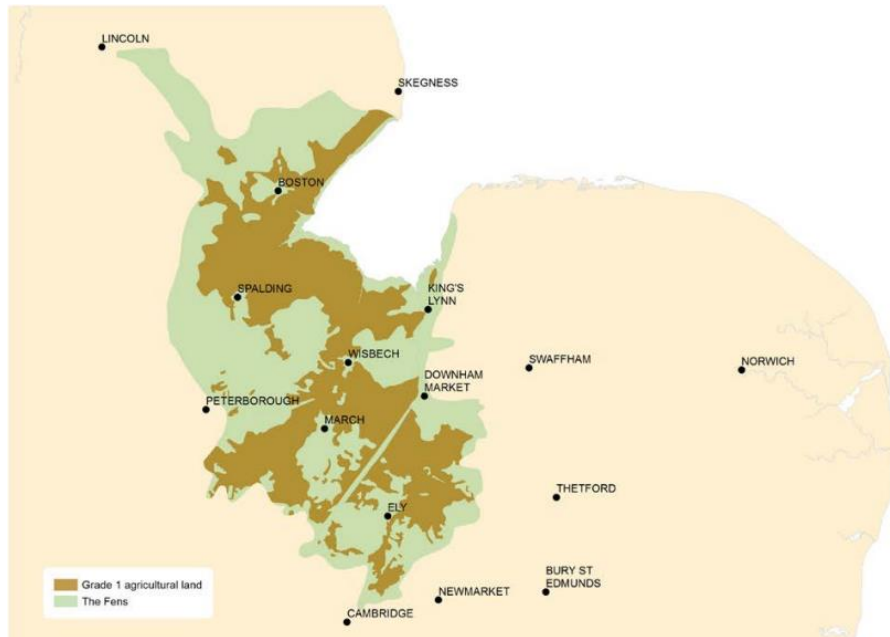


Photo credit: Naomi Stevenson, Natural England

The UK Centre for Ecology and Hydrology has shifted towards policy-related activities and questions such as managing land systems to increase carbon storage while minimising greenhouse gas emissions. This group has monitoring networks across the Fens, which collect data on how energy balance, greenhouse gas emissions, and water balance, can contribute to carbon budgeting and future policy decisions.

### Incentivising change

There are clear administrative barriers for farmers, such as access to technology and understanding the associated costs and risks to their livelihoods of any changes. Farmers are citizen scientists and are distinctly aware of the challenges they face so it is crucial that we understand what makes a farmer more able and willing to adopt new farming techniques or land use options. Does knowing the greenhouse gas emissions or presence of a certain beetle make some farmers more willing to adopt more different or more sustainable practices? What additional incentives are required? While new schemes like ELMS have made progress, the necessary detail is still lacking. It is therefore vital to continue to co-design solutions with farmers to make them part of the research.

Local Nature Partnerships play an important role in developing opportunities for empowerment. Natural Cambridgeshire, for example, works with local authorities, environmental NGOs, and other environmental stakeholders to better engage with the public, encouraging individuals to step forward with projects. Indeed, many farmers have presented excellent ideas. This work is important for informing policy makers and researchers about the issues facing farmers, as they try to understand the likely impacts of different farming practices and changes in land use on the viability of their businesses, and what might incentivise them to diversify or adopt new ways of managing their land. Equally, non-farmers are important, as local communities not only want to act for nature, but many are doing so already. A recent pilot by Natural Cambridgeshire of a small grant scheme to support local communities to do more for nature where they live has shown that many individuals and local groups are striving to take local action. A strong and informal network of exceptional climate leaders across Cambridgeshire has developed organically. This offers an opportunity for the CLR to open the door to a collaborative space for such individuals to take local action for nature. This might focus on the development of a Local Nature Recovery Strategy, which is being taken forward by Natural Cambridgeshire working with Cambridgeshire County Council and other local authorities in the area.

## Concluding remarks

Considering the wishes and values of communities must be seen as an integral part of tackling challenges in the Fens. Local communities and cultural considerations should be integrated into any policy or research. The importance of continued and deep interaction between researchers and policy makers was made clear during the event. Indeed, one observation of the presentations given was that the 'voice of the people' e.g. in the form of video recorded 'vox pops', was something that was missing on the day. It was also suggested that this interaction could be facilitated by secondments, further discussion events and engagement between individuals and small groups. Research in this continually developing area must adapt to new challenges and questions and ensure engagement with a wide range of stakeholders. The importance of long-term thinking was emphasised, particularly given the context of the CLR's current five-year funding period. Additional opportunities for knowledge sharing and collaboration are likely to exist with the other collaborations that are part of the Changing the Environment Programme (RENEW at the University of Exeter, AGILE at the University of Oxford and GALLANT at the University of Glasgow). There was support for better data sharing and visualisation tools and the development of such tools will be important in future planning.

The complexity of the challenges and solutions was highlighted, and the ensuing risk of inertia was mentioned, as was the fact that policy and development actions may need to go ahead before the ideal data is fully available.

By the end of the discussions, it was apparent that the challenges facing the Fens and their solutions present many trade-offs that policy makers and researchers must consider. There are many critical issues to consider, as well as open questions regarding the best way for government to interface with local organisations and communities in planning for the future of the region.

Considering the system holistically, in such a diverse landscape as the Fenlands, solutions to key issues of climate change, food and water security, and biodiversity loss, come with inherent social challenges. The value of continued conversations between participants was clear, which could be through a combination of further discussion groups or subgroups and continued communication with the CLR.

In conclusion, the participants highlighted the incredible complexity of the issues facing the Fenlands today and made evident that many routes to success in the Fens exist if the challenges of this unique landscape are addressed through a collective approach from stakeholders.

# Participants

**Dame Fiona Reynolds** (chair), Deputy Chair of the Food, Farming and Countryside Commission and former Master of Emmanuel College

**Dr Rob Doubleday** (chair), Executive Director, Centre for Science and Policy, University of Cambridge

**Professor Andrew Balmford**, Professor of Conservation Science, Department of Zoology, University of Cambridge

**Anushree Bhattacharjee**, Programme Officer, Nature Restored, UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)

**Dr Richard Bradbury**, Head of People Conservation Science, Royal Society for the Protection of Birds (RSPB)

**Professor David Coomes**, Department of Plant Sciences, and Co-director of the Centre for Landscape Regeneration, University of Cambridge

**Sophia David**, Head of Behaviour Change for Net Zero, Department for Energy Security and Net Zero

**Dr Lee Davies**, Deputy Director, Climate Change Adaptation, Department for Environment Food and Rural Affairs (Defra)

**Professor Lynn Dicks**, Conservation Scientist and Lecturer in Animal Ecology, Department of Zoology, University of Cambridge

**Mehul Doshi**, Head of Major Projects, Geospatial Commission

**Dr Helen Driver** (report author), Research Programme Manager, Centre for Landscape Regeneration, University of Cambridge

**Helen Dye**, Co-ordinator, Natural Cambridgeshire

**Dr Richmond Juvenile Ehwi**, Research Associate, Department of Land Economy, University of Cambridge

**Professor Shailaja Fennell**, Professor of Regional Transformation and Economic Security, Department of Land Economy, University of Cambridge

**Rachel Fisher**, Deputy Director Land Use Policy, Department for Environment Food and Rural Affairs (Defra)

**Dr Shaun Fitzgerald**, Director, Centre for Climate Repair, University of Cambridge

**Dr Rachael Foy**, Programme Manager (Strategic Partnerships and Capital), NERC

**Dr Laurie Friday**, (report author) Research Programme Manager, Centre for Landscape Regeneration and Director of the Isaac Newton Trust; Fellow of Newnham College, University of Cambridge

**Dr Sophie Harrington**, Systems Research Scientist, Department for Environment Food and Rural Affairs (Defra)

**Jonathan Hoare**, Deputy Director, Net Zero Strategy Directorate, Department for Energy Security and Net Zero (ESNZ)

**Megan Hudson**, General Manager, Fenland SOIL

**Vicente Macia-Kjaer**, Programme Coordinator, Cambridgeshire and Peterborough Land Use Pilot, Food, Farming and Countryside Commission

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**Thomas Idris Marquand** (report author), PhD Researcher, Centre for Landscape Regeneration, University of Cambridge

**Dr Dan McGonigle**, Head of Systems, Innovation and Futures, Department for Environment Food and Rural Affairs (Defra)

**Lydia McKee**, Natural Resources, Carbon Budgets Policy Development, Department for Energy Security and Net Zero

**Dr Ross Morrison**, Flux Scientist, UK Centre for Ecology & Hydrology

**Dr Christopher Moses**, Policy Lead - Future of Lowland Peat, Department for Environment Food and Rural Affairs (Defra)

**Dr Marilena Pollicino**, Lead Analyst, Access, Landscapes, Peatland and Soils, Department for Environment Food and Rural Affairs (Defra)

**Francesca Re Manning**, Programme Manager, Cambridge Global Food Security IRC, University of Cambridge

**Dr Nada Saidi**, Head of Research and Analysis (Land Use Framework), Department for Environment Food and Rural Affairs (Defra)

**John Shropshire**, Chairman, G's Fresh

**Professor Emily Shuckburgh**, Director, Cambridge Zero and Co-Director of the Centre for Landscape Regeneration

**Hannah Stanley-Jones**, Head of Sustainable Growth, Anglian Water

**Dr Elizabeth Stockdale**, Head of Farming Systems Research, (NIAB)

**Judith Stuart**, Peatlands Policy Specialist, Soils and Peatlands, Natural Environment, Trees & Landscapes, Department for Environment, Food and Rural Affairs (Defra)

**Dr David Thomas**, Programme Manager, Endangered Landscapes Programme, Cambridge Conservation Initiative (CCI)

**Steven Trehwella**, Director, Rivelin Bridge Ltd and Fens2100+ Programme Technical Director

**Dr Dacia Viejo-Rose**, Director, Cambridge Heritage Research Centre, University of Cambridge

**Dr Katherine Wright**, Deputy Director, Local Net Zero, Net Zero Strategy Directorate, Department for Energy Security and Net Zero

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