Adaptation planning and the use of climate change projections in Local Government in England and Germany

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Highlights

- There is **little demand for climate projections** in local adaptation planning in Germany and England.
- Local **adaptation planning** has **waned** in England due to **austerity** and the **Localism agenda**.
- The **strongly regulated** German **planning system favours the use** of **past and present** instead of **future climate data**.
- **Regulatory** and **legal contexts** are **key determinants** of the **usability** and **adoption** of **climate projections**.

1. Introduction

- **Planning (for adaptation)** is considered to be a **key tool for progressing action on reducing vulnerability** to climate impacts[1], and **Local Authorities** have **substantial power over local planning** in terms of both strategic decision-making and land-use management[2].
- Often such planned adaptation utilises '**information about present and future climate change** to review suitability of current and planned practices, policies, and infrastructure'[3]. More often than not such information is **based on climate projections**. Another common form of information used for planning, particularly in Germany, are **climate function maps**, which take into account the topography, land use and building coverage and show an area-wide representation of the thermal and dynamic microclimate[4,5].
- The **interaction at the boundary** between those **producing climate information** and those **using it to implement adaptation action** can be **more effective if an iterative approach** is employed based on three key principles: **interdisciplinarity**, **interaction with stakeholders**, and the **production of usable science**[6].
- The conceptual model on the '**climate information usability gap**'[7] clearly distinguishes between **useful knowledge** (as provided by producers of climate information) and **usable knowledge** (as required by users of climate information).
- The '**perception of usefulness** and the **actual capacity to use different kinds of information**'[6] are **influenced by both contextual factors** (formal and informal institutions, competing factors in the decision-making process such as organisational preferences towards other types of information instead of climate information, organisational culture, wider cultural context of information use, availability of alternative action pathways) and **intrinsic factors** (understanding of the decision-context, spatial and temporal scales of information, perceived legitimacy and trust in scientific information, accessibility of information)[8].
- The aim of this research is to **incorporate previously identified contextual challenges for adaptation planning**[9,10] **into the conceptual model of the climate information usability gap**. In doing so, a **firmer grounding of the discussions on the usability of climate information** within the wider field of adaptation planning can be achieved.

2. Case studies

- The UK and Germany are considered **leaders in climate change adaptation**[11,12] and in both countries, **local government is a key implementer of adaptation**[12].
- Prior to 2010, local government performance in the UK was measured and compared by the Audit Commission by using a set of 198 National Indicators (NIs)[13] with one of these specific to adaptation: the **process-based indicator *NI188 – Planning to adapt to climate change,*** which was considered a strong steering mechanism and driver of action[14,15].
- Since 2011, **local government is no longer required to report to the central government** on their performance on adaptation and has also experienced a **28% budget cut** [16].
- In Germany, the details of delivery and implementation of **adaptation are determined by the policies and goals of the individual Länder**. Some Länder have **enshrined adaptation at regional scale**, but it is also part of the **hierarchical planning structure** at **national scale** (Federal Building Act and Regional Planning Act).

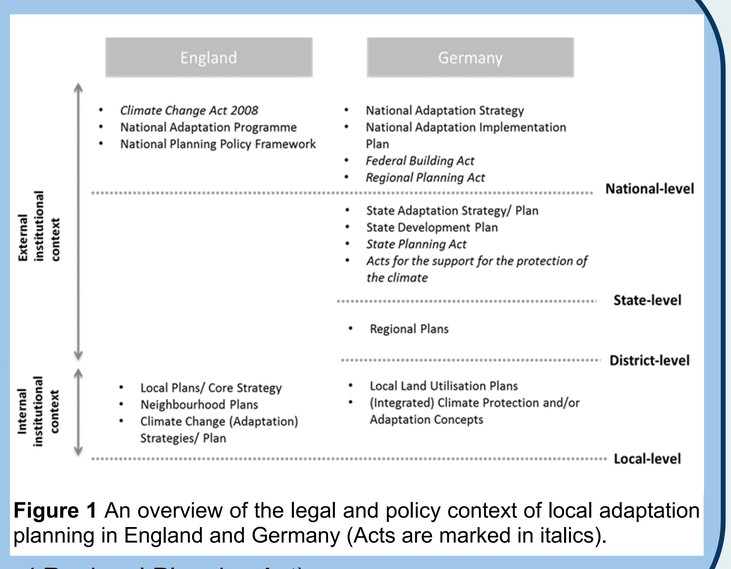

Figure 1 An overview of the legal and policy context of local adaptation planning in England and Germany (Acts are marked in italics).

3. Methods

- **54 semi-structured interviews** with **67 adaptation practitioners** at the local, regional and national level in **Germany** and **England** (July 2013 - May 2014).
- The majority of the interviewees (n = 52) came from **three focus regions** (England: South East and East Midlands, Germany: North Rhine-Westphalia (NRW)). The remaining ones (n = 15) were based outside of the three regions.
- We also searched and gathered **publicly available strategic planning and climate change documents** for the Local Authorities with whom we conducted interviews and analysed whether the documents referred to or used climate projections.

4. Results and Discussion - England

- There was initially a very **ambitious approach to adaptation both nationally and locally** on the basis of the regulatory framework around the indicator NI188.
- The Department for Environment, Food and Rural Affairs and the UK Climate Impacts Programme **strongly advocated the use of climate projections** in Local Authorities. Yet, there is a **distinct lack of integration** of climate projections into local strategic and spatial planning.
- Whilst training on the use of the UK Climate Projections 2009 (UKCP09) was provided to some municipal officers, **many Local Authorities failed** to generate sufficient information on current and past vulnerabilities and exposure to impacts to be **able to effectively use climate projections**.
- The **use of climate projections** appears not only to have been **confined to certain (initial) stages of the adaptation planning** progress but also mostly **to the respective officer or team** tasked with the climate change agenda (predominantly the environment/ climate change teams).

> *"And so we were progressing quite well, 'til 2011, when all the indicators…went out the window with the new government, really. So it was all change again, and adaptation, at that point in particular, really dropped completely off the radar."*

- From 2010, the Conservative-Liberal Coalition Government introduced substantial changes to the regulatory and planning framework within which Local Authorities are situated. Not only was the **indicator set dismantled**, but the **Localism Act 2011** promoted a **voluntary approach to climate change adaptation**, causing an 'erosion of resolve' to progress on adaptation[17].
- **Staff redundancies** and **staff transferral** in the wake of local council efficiency savings as well as the **dismantling of NI188** have resulted in a waning of adaptation and a **loss of engagement with climate projections**.

4. Results and Discussion - Germany

- Although the climate protection act in NRW sets out a roadmap for action on climate change, it is considered a **political declaration of 'advisory character'** due to the lack of clear targets, responsibilities and sanctions in the law and adaptation remains a voluntary task at local level.
- Due to adaptation being in the early stages at local level, **climate projections do not play an important role** in local decision-making processes. They are only referred to in the climate change (adaptation) plans of three Local Authorities and in the state adaptation plan, but not in any other planning documents.

> *"As an evaluation tool, [the climate function map] is a very important instrument here in the municipality. It is taken seriously."*

- However, climate data in the form of **climate function maps and planning recommendation maps**, has been **widely used in the planning process** and is **well embedded** in the German planning system. In fact, the **current state of climate** is considered by many Local Authorities sufficient **for planning purposes**. Only some Local Authorities have used climate projections to complement current climate maps to explore the future state of local climate.
- The **strictly regulated German planning system** makes the use of climate projections in planning processes difficult, because they **do not fulfil the formal expectations** (data used needs to be spatially sufficiently concrete and accurate) about the nature of the information they provide[18].
- **Projections are not used** simply because it is **not required by the rules of federal and regional funding** available to Local Authorities for climate protection.
- Thus lack of use of climate projections is **less of an issue of insufficient technical capacity or lack of tools** but more an **issue of lack of fit with regulatory and institutional requirements** in the planning system and perceived communication and engagement challenges.

5. Conclusion

- Although it is well-recognised that the **external institutional context strongly impacts local adaptation planning**, this recognition needs to be **more clearly integrated into the discussion on the usability** and adoption of climate projections.
- Whilst **climate projections are not considered usable** in local adaptation planning for different reasons in the two countries, their experiences highlight the **significant impact and importance of the external institutional context**. Just as the progress on adaptation at the local scale can be **helped or hindered by the wider rules, policies and regulations**, so can the **usability of climate projections**.
- There may be **challenges outside of the user-producer interaction** that even co-production or co-creation cannot overcome, and we do need to be aware of them to obtain a **pragmatic understanding of the usability of climate projections in adaptation planning**.
- We may run the **risk** that our **current focus on too narrowly defined improved usability** tries to come up with ever smarter solutions through tailoring of information, whilst being **ignorant of the wider context by which its usability is impacted**.

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