

“Pioneers but not guinea pigs”: experimenting with climate change adaptation in French coastal areas

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Published online: 1 February 2017
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Abstract Uncertainty surrounding climate change has encouraged policy makers to engage in flexible and exploratory policies and forms of policy making. The article examines the potential of experimentation in devising coastal adaptation policies, taking into account its political dimensions. We analysed a multi-level experiment, funded by the French Ministry for the Environment from 2012 to 2015, where coastal municipalities volunteered to simulate the implementation of planned retreat as an adaptation strategy. Using insights from discursive institutionalism, we tracked developments throughout the experiment period. We highlight a combined process of governance experiment, allowing social innovation at local and regional scales, and a more strategic tool for the state, governing and steering local coastal policy with new instruments. We shed light on a particular policy entrepreneur (a public organization dealing with coastal management) playing at the intersection of these two forms, and in the interplay of policy scales. Although the experiment contributed to the innovation of legal and economic instruments and produced policy feedbacks in local planning and governance, learning capacities of the multi-scale architecture are still moderate to make planned retreat a reality in the near future. The conclusion considers performative and interpretive effects of policy experiments as further research questions to explore.

Keywords Climate change adaptation · Policy experimentation · Discursive institutionalism · Policy entrepreneur · Boundary work

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Introduction

Adaptation strategies are enjoying increasing recognition in many coastal areas, in view of rising sea levels and extreme weather events (Wong et al. 2014). However, many uncertainties surround the ways in which climate change can be dealt with in the long-term. After a period mostly centred on international collaboration and agreements, a growing number of actors and organizations now appear to be developing new and more polycentric forms of climate governance, through interconnected international, transnational and national initiatives (Jordan et al. 2015). Rapidly expanding initiatives at supra- and infra-national levels are thus deepening the multi-level features of climate change governance (Keskitalo et al. 2010). In this burgeoning area, more and more “climate governance experiments” (Hoffman 2011) are used to explore new practices and knowledge relating to climate issues, in many different places, such as cities (Bulkeley and Castán Broto 2012).

While experimentation seems to have become a key issue in several policy domains, and for some a governance regime for the European Union as a whole (Sabel and Zeitlin 2012), empirical research is required to understand the potential and limits of experiment-based approaches in climate change governance. This requires identification of the origins and incentives of experiments, an understanding of how and by whom they are conducted and a greater comprehension of their direct and indirect effects on policy-making processes. In this respect, some scholars have pointed out how a great deal of adaptive governance literature does not sufficiently consider the political dynamics at play (Voß and Bornemann 2011). We concur with this view, which calls for experiment processes not to be considered as if they were isolated from broader transformations in politics. Through a detailed investigation of a climate adaptation policy experiment, this paper seeks to analyse the political scope and dynamics at stake in experimental policy making, as well as their potentials in terms of policy innovation, in the sense of invention, diffusion or effects of new policies (see Jordan and Huitema 2014).

The article reports on a qualitative, in-depth study about an experiment which took place in France from 2012 to 2015. A call for proposals was sent out by the French Ministry for the Environment to local councils, asking for volunteers to take part in a simulated implementation of planned retreat. As a coastal adaptation strategy, planned retreat is considered by many to be the most sustainable and cost-effective approach, but it poses serious socio-technical and political challenges for national and local governments (Abel et al. 2011; Nicholson-Cole and O’Riordan 2009). The experiment sought to face some of these challenges and move forward by enabling new forms of cooperation among actors and scales of action. The key questions this article attempts to answer are the following: how was the experiment designed and carried out by the State? To what extent was this approach different from the existing coastal governance system? What were the facilitating and limiting factors and the innovation processes? What has been learned from the experiment and which is (or could be) transferred into public policy?

Two main results are summed up here, before being presented in detail later in the paper. The first one is about the tensions in the experiment purpose: the experimental device enabled meaningful developments and learning processes that could be part of future policy changes, but it is also illustrative of new and more strategic practices in French public management, along with changing central-local relationships. Secondly, a policy entrepreneur (the public interest group of Aquitaine coastline) contributed to move

forward by proposing new planning and regulatory instruments and allowing positive impacts on different scales of action. However, there are still legal, financial and political impediments to make planned retreat a reality, particularly due to limited learning capacities, for the governance system as a whole, to engage in greater changes.

The rest of the paper is structured as follows. In the second section, we present the theoretical and conceptual insights selected to analyse political dynamics in the policy experiment (see also Schroth, in this issue). We describe in the third section the design of the planned retreat experiment and the methodological approach we used to collect and to analyse related data. The fourth section describes the key results about the sources, the dynamics and some effects of the experiment, in a multi-level perspective: (i) we show how the experiment is part of current changing practices in French state policy making, (ii) we describe the way the experiment took place on Aquitaine coastline in southwest France, where the public interest group of Aquitaine coastline played a central role through discursive practices of legitimization, (iii) and finally, we analyse in more details some impacts of a local experiment coordinated by this entrepreneur. The final section summarizes key findings and draws out perspectives about the effects of such experimental policy design.

The politics of climate change adaptation: ideas, discourses and power in policy experiments

The question of long-term climate change, encompassing a multitude of issues and scales of action, raises a number of complications for governance systems. These range from the “interplay of scales” (Cash et al. 2006; Urwin and Jordan 2008; Bérard 2011) to the difficulty of producing both stable and adaptable instruments and policies (Jordan and Huitema 2014). To cope with complexity and uncertainty in social-ecological systems, scholars and policy makers are exploring new instruments and new ways of governing issues such as global environmental change. Considering blueprint and traditional regulatory approaches as incompatible with uncertain or unpredictable shifts in a system, some governance designs are promoted and tested to ensure flexibility and collective learning in the course of action. In particular, polycentric and multi-level governance systems, public participation, iterative processes of experimentation and learning by doing are the main features of an adaptive governance design (Brunner et al. 2005; Folke et al. 2005; Armitage et al. 2007; Huitema et al. 2009). Rather than adopting a normative approach to learning, we propose to focus on institutional and organizational factors (such as trust building and participation) related to social learning that can be part (the processes) or the result (the outcomes) of a policy experiment, especially “double-loop” learning, defined here as a collective and iterative reflection involving changes in values and policies (see Armitage et al. 2008).

In the pragmatist philosophical school of thought (especially in Dewey’s work), because of the plurality of values and the constantly changing nature of the world, the best way to achieve individual and common good has “to be experimentally determined” (Parker 1996). This highlights a first question relating to why and under which conditions individuals would participate “actively” in public debate and experimentation. This is a particularly poignant question in the case of climate change, whose effects are not self-evident at local or short-term scale, attitudes can be very different. This also questions the different and often unequal political capacities of actors involved in the governance of

climate change adaptation. Social experimentation engages many values and world views through deliberation, choices and conflicts. It is therefore deeply rooted in political dynamics. In this respect, Bulkeley and Castán Broto (2012) identified three ways of theorizing experimentation in urban climate change experiments: as governance experiments, as socio-technical experiments and as strategic experiments. Beyond these theoretical lenses, they are all tentative and “purposive interventions in which there is a more or less explicit attempt to innovate, learn or gain experience” (Bulkeley and Castán Broto 2012, p. 363). In this article, we share this broad definition, as well as the argument that they are also symptomatic of changing structures of political authority. We will specifically elaborate on this point in the fourth section and the discussion.

Following on from this definition and the work of Voß and Bornemann (2011), we support the idea that there is a critical need to (re-)integrate or (re-)embed “nasty” politics when analysing climate policy experiments. First, as Huitema et al. (2009) remind us, experimentation is not a neutral activity, but rather depends on why, by whom and how experiments and problems to deal with are framed and carried out. Experimentation can thus serve many goals, which are most often related to knowledge production and problem solving. Experimental policy design can therefore be a political way of bridging issues, sectors and scale levels as well as ensuring connectivity between “the Old and the New” (Termeer et al. 2011). It encourages stakeholders to endorse “shared responsibility”—both responsiveness and accountability—when participating in rule making, as a means to increase both the effectiveness and legitimacy of environmental policies (Salles 2011). Other goals can include restructuring and rescaling the (local and national) state (see in this issue Schroth, also Bulkeley and Castán Broto 2012), opening new political and “institutional spaces”, selling or transferring policy using “pilots” and “demonstration projects” (Sanderson 2002; Huitema et al. 2009), testing social acceptability of new rules, constructing citizens through new forms of public participation (Laurent 2011) and helping in framing or projecting the future (Nair and Howlett 2016). Finally, the institutionalization of practices and innovations produced through experimentation depends on appropriation, diffusion and scaling-up processes, ensuring a certain stability and robustness for long-term issues. In this perspective, analysing the tensions between climate change experiments and existing institutional arrangements in specific contexts can provide useful understandings about the dynamics and effects of experiments in policy learning and change.

How can we approach such experimental devices and their relationships with policy innovation and policy learning? It can be assumed that ideas play a significant role in social experimentation and innovation, especially by exploring, testing and sharing conceptual and perceptual points of view. As such, uncertainty and the strong forward-looking dimension of climate change issues are important factors dealing with ideational abilities of stakeholders involved in an experiment. Indeed, framing and projecting the future raise the critical issue of providing meaning to a course of action through policy experimentation (Nair and Howlett 2016). Participative and deliberative procedures also play an increasing role in the construction of new policy designs, as in environmental policy making in France (Mermet and Salles 2015). Both ideas and discursive interactions, and the way they are constrained and enabled by experimental framing processes, are thus interesting indicators in assessing why and how individuals and groups of actors engage in and can bring about policy learning and innovation through experimentation. In this regard, discursive institutionalism (Schmidt 2008, 2010), “taking ideas and discourses seriously” in explaining institutional change, provides valuable insights for such an analysis. Tracing ideas and discourses’ evolutions, along with institutional

dynamics over the generally short-duration periods of experiments, can help us to analyse the forms of meaning production, trust building and social learning through communicative action, as well as the power relationships, resistance and “overflow” effects of experimenting with social actors. Analysing discursive practices and strategies, as means of framing and incorporating global ideas (such as climate change adaptation) in local contexts, can highlight the legitimization processes involved in a policy experiment, for example through coordinative and communicative discourses (Schmidt 2010).

The policy sciences literature offers other insights about the role of ideas and discourses in policy change or innovation. The role of policy entrepreneurs has been widely acknowledged in this regard. As experiments often take place within the fragmented spaces of political authority, or with limited existing rules on how to govern (Hoffman 2011; Bulkeley and Castán Broto 2012), the resources of policy entrepreneurs can be an essential consideration in experimenting or selling new policy options (Kingdon 1984; Huitema and Meijerink 2010). Olsson et al. (2006) have stressed bridging functions and leadership as highly relevant in the linking dynamics of adaptive governance. Actors or organizations acting at the interfaces between sectoral policies, scales of governance, and between science, policy and society (Brunner et al. 2005; Driessen et al. 2010) can be critical to experiment policy making. Among the different figures and features of entrepreneurs in policy sciences, one will therefore retain our attention in the fourth section—that of “boundary entrepreneur” (Bergeron et al. 2013), who is characterized by “his position on the boundaries of multiple worlds under tension, his ability to reproduce and reinforce many boundaries and his role as a ‘boundary object’ open to the projections and manipulations of various actors involved in these worlds” (p. 204). Ideas, discourses and power form thus the three pillars of our analytical framework, through which actions of the policy entrepreneur will be specifically studied.

Background, methods and data

Although planned retreat is one of the main adaptation options for coastal areas (Nicholson-Cole and O’Riordan 2009; Abel et al. 2011; Wong et al. 2014), many barriers to doing so actually exist, as distribution of public and private responsibilities, sharing of costs and benefits, rules and incentives relating to property rights (Abel et al. 2011) and social equity and justice considerations (Cooper and McKenna 2008). Local and regional authorities are forced to juggle the residential and tourism development with the very real problems of rising sea levels and coastal erosion. Considering some situations at risk and other complications in future decades, implementing planned retreat is currently an important challenge in coastal management throughout France. In this vein, we conducted an in-depth research about an experiment dealing with this challenge. We analysed its main incentives, dynamics, outputs and outcomes, mainly at national, regional, and local scales of action, including specific case studies in southwest France. This architecture, that was motivated by and consistent with the multi-level dimension of climate governance systems, structures the background below.

In March 2012, as part of the national integrated coastline management strategy (2012) and the 2011–2015 national climate change adaptation plan (MEDDTL 2011), the French Ministry for the Environment launched a call for proposals entitled “experimentation of planned retreat on territories threatened by coastal risks”. Three years after the *Grenelle de*

la Mer, which itself advocated the introduction of such an approach, and 2 years after storm Xynthia (the main recent coastal disaster in France with 47 deaths and about € 1.5 billion damages), the growing recognition of coastal systems' vulnerability to climate change motivated this initiative. The mid-term evaluation of the national adaptation plan pointed out that: "like the ever-changing process of adaptation, these experiments are designed to aid in selecting the actions to take as part of a strategy of integrated coastal zone management [and] play an important role in coastal adaptation" (MEDDE 2013). The call for proposals intended to encourage local authorities to experiment with planned retreat (or relocation) of private and public goods and activities. Providing combined funding of € 600,000 over 2 years, experiments were required to contribute to the drafting of national guidelines for policy makers relating to principles (situations where planned retreat should be implemented) and technical, legal, financial and economic levers and tracks of action (existing instruments, funding plan options, costs and profits evaluation, etc.). There were only five responses to the call for proposals, all selected by a board including government representatives (mostly from the Ministry of Environment) and "experts and qualified individuals" (researchers, representatives of public organizations and associations and one member of the UK Environment Agency). The experiment aimed to increase knowledge about current and future coastal dynamics, problematize future coastal issues and examine the technical and social feasibility of planned retreat in a number of specific contexts. The limited duration and the financial basis were meant to carry out creative and innovative work, whether studies or field trials, for finding solutions and innovating in coastal planning and strategies, particularly in the legal, technical, economic and financial fields. The projects actually involved were all designed to project into the future with planned retreat implementation under existing legislation, with the aim of exposing any potential regulatory pitfalls. They did so essentially with scenarios approaches, feasibility analyses, adding in most cases a participatory design through consultation committees (see "Experimenting with planned retreat: climate governance and steering" Section).

The Aquitaine coast in southwest France comprises 230 km of sand dunes and 40 km of rocky cliffs. It has been identified as one of the coastlines most at risk from erosion (European Union 2004). Around a third of the coast is retreating at an average of 1–3 m per year. Despite a long history of protection and conservation work in the area, some zones are already at very high risk. This has been exacerbated by accelerated erosion over the last few years, particularly in 2013 and 2014, when heavy storms caused serious damage to private and public infrastructure. In recent years, the Region of Aquitaine¹ has been active in putting climate change adaptation on the scientific and political agenda, notably by establishing a scientific committee producing and updating a scientific synthesis on climate change impacts and vulnerabilities. But what makes the Aquitaine coast interesting here is the presence of a specific institution: the Public Interest Group of Aquitaine coastline (henceforth referred to as "the GIP"). The GIP is a formal public partnership set up in 2006 between all coastal authorities in the region, including state services, whose actions are guided by the "2007–2020 sustainable development plan for Aquitaine coastline". This governance structure is defined as "a reflection, coordination and support tool for coastal areas management and planning [enabling] partnerships as well as strengthening consistency between local actions" (GIP Littoral Aquitaine 2009). It therefore participates in the multi-level governance of coastal issues, particularly as it

¹ Following a territorial reorganization in France by the end of 2015, this region is now part of a larger regional territory including Limousin, Poitou–Charentes and Aquitaine regions.

brings together and interacts with state services and regional and local authorities.² The GIP coordinated three local sites in the experiment process,³ playing an intermediary role between central government and local groups of actors, within the “interplay of scales” discussed above.

The local case study selected for this paper is that of Lacanau, the one where issues relating to coastal risks are the most salient among the experiment sites in Aquitaine and where the experiment process moved the farthest in terms of cooperation and public participation. Lacanau is a coastal municipality with an official population of around 4500 inhabitants. However, this figure can increase more than tenfold in the summer months. Its reputation is mostly built on environmental amenities provided by its three major natural attributes: the sea, the beach and the forest. The seaside resort of Lacanau-Ocean has significantly developed, and tourism and leisure activities (especially surfing) are now clearly vital to the local economy. With an average of 1–3 m/year of coastal retreat, private and public infrastructures are under threat from erosion, despite extensive coastal protections. It has been forecasted that 1200 homes and 100 businesses, along with other elements of the local infrastructure such as roads and car parks, will be at risk from erosion by the early 2040s (SOGREAH 2011).

Our key source for data collection was direct observation of 30 national, regional and local meetings and committees. These were both “restricted” (mostly technical and steering committees) and “public” (open forums, consultations, focus group, etc.). Appendix illustrates the number and range of meetings and actors involved at different levels of governance. All the attended events were recorded, along with note taking to capture salient discursive interactions as well as contextual aspects. Half of all events were transcribed to analyse the development of ideas and discourses throughout the experiment. Observations were combined with policy document analysis and 20 semi-structured interviews. The interviews were conducted between June 2014 and February 2016, with central and local state services officials, local associations and residents, coastal engineers and experts, and representatives of public institutions dealing with coastal issues in Aquitaine. They sought to grasp visions and meanings of actors involved in the experiment about the way it took place, facilitating and limiting factors and the respective roles of partners. We will here focus on the dynamic and political processes of the experiment through applying our framework mainly to data collected through direct observations during policy forums and arenas.

Experimenting with planned retreat: climate governance and steering

Institutional framing of a nationwide policy experiment

As mentioned above, whatever the positive effects and feedbacks it could entail, analysis of experimentation calls for political origins and implications to be considered. Among the different drivers for planned retreat to be experimented in France (see “[Background](#),”

² Organizationally speaking, it is composed of a technical team of 5 persons with a director and a president, who is chairman of the board. A technical group (technicians of member structures) and an advisory council (partners and stakeholders of coastal policies) are two forms of partnership involved in this functioning. Financial resources are mostly subsidies of its member structures and various grants (national and European funds, specific grants according to studies and actions that are carried out).

³ These sites are namely the *communes* (French municipalities) of Lacanau, La Teste and Labenne.

methods and data” Section), one deserves attention due to the instrument used for initiating the process, namely the national call for projects. Indeed, we argue that the call for proposals to experiment with planned retreat is a manifestation of new governing and steering practices of French government. Recent analyses have highlighted some trends in French state restructuring, whereby new forms of public management are implemented in order to gain leeway and achieve policy aims by distributing responsibilities at various infra-national levels. As Béal and Pinson (2015) explain it, neo-managerial tools allow the state “to reinforce its capacity for steering public policy at the local level, or at least give credit to this capacity in a few particularly visible areas” (p. 415). A good example of this is the field of urban renewal, which clearly illustrates these changes in French public management (Epstein 2013). Calls for projects, policy approval mechanisms and conditionality in financial subsidies are all part of these instruments promoting greater autonomy to local authorities and governments, albeit within a more restricted and competitive framework of actions.

By the same token, experiments are beginning to be seen as a prerequisite for policy making in France, particularly in education, social policy, urban sustainability and environmental policy domains. Given that integrated coastal zone management (ICZM) is seen to offer conditions conducive to coastal adaptation (Celliers et al. 2013; Wong et al. 2014), it is worth noting that a call for proposals was carried out in France between 2005 and 2007, with the aim of testing “balanced development of coastal territories through ICZM” (see Deboudt 2012). A 2010 report into ICZM implementation in France showed that authorities who had not taken part in the project had not benefited from the project’s findings and that there was still a need to “move from an experimental approach to a more systematic implementation of ICZM” (DATAR 2010).⁴ In this sense, we fully concur with Bulkeley and Castán Broto (2012) in recognizing the strategic part of the experiment, as a “means through which governing as normal takes place” and “through which discourses and visions concerning the future [...] are rendered practical and governable” (p. 367). Here, the call for projects can be seen as an instrument for evidence-based policy making (Sanderson 2002), as the experiment served the government in problematizing coastal issues, learning from pilot projects and setting new objectives—such as planned retreat—for future coastal policies. The experiment approach did not therefore introduce a real shift in the governance system, even if the goal of putting planned retreat on the political agenda is at odds with long established coastal protection policies.

Discursive dimensions illustrate the legitimization of such a governing approach in the experiment process. “Shared responsibility” and “shared strategy between state and local authorities” were first championed to enlist participants. During the launch seminar of the experiment, the Ministry for the Environment stated: “our aim will be to assist and support local authorities who have taken the decision to experiment with a new concept”, by “creating projects in partnership with local stakeholders that are not just about regulations”, and for “achieving more effective and participatory management”. These sentiments were echoed by other stakeholders, such as one local Mayor and politician: “Today, we are at the heart of a nationwide strategy, bringing together management figures from both local authorities and central government” (National Association of Coastal Elected Representatives). Accountability, transparency, efficacy and inclusiveness are all principles encompassed in what Schmidt (2013) has conceptualized as “legitimacy by throughput”, embodied in discursive interactions of institutional dynamics.

⁴ Two main reasons explaining why diffusion did not happen were advanced: the weakness of evaluation systems and the absence of networking at the national scale.

More specifically, the framing of experimentation was first pushed by the Ministry for Environment, promoting “*innovative, experimental, and cooperative relocation of goods and activities*” (MEDDE 2012, original emphasis). At national seminars, government officials stated that “experiments have to be conducted in situ”, by “testing hypotheses, because only experimentation can allow us to move forward”, also thanking local authorities “to engage in it as forerunners”. Many actors engaged in the experiment bought into this framing, as in Aquitaine (see below) where some partners, by the end of the experiment period, were willing “to move towards an operational step”, to “test and be pragmatic”. However, other stakeholders called for greater changes: “coastline mobility should go hand in hand with greater flexibility in the regulations by which we must abide. [...] When we talk about the right to experiment, we must examine these issues in greater depth. We cannot solve these problems without [...] applying greater innovation to the way in which coastal zones are regulated” (a senior representative from the *Conservatoire du Littoral*). For them, the creation of a set of guidelines was not enough to ensure effective adaptation planning.

Towards the end of the planned retreat experiment, a monitoring committee was set up as part of the French national strategy for integrated coastline management. Drawing lessons from the planned retreat experiment was one of its tasks. Although it is too early to fully appreciate the ability of the French government to respond to these demands, the 2015 report of the committee highlighted that clear national steering and financial means were part of success conditions to operationalize shoreline management plans and adaptation strategies. In this line, the two MP chairing the national monitoring committee tabled a law proposal in July 2016, aiming to strengthen the legal and financial instruments for climate change adaptation in coastal areas. On the other hand, a new call for projects for coastal adaptation strategies will be launched by the Ministry for the Environment, whereas the lessons and demands for legal, organizational and financial changes following the experiment are not still fully assessed. Although this new call could contribute to upscaling and making planned retreat a reality in future, it tends to confirm the above considerations about the managerial dimensions of the experiment. These two faces of the same coin, that are a technique of government and a social experimentation process, are thus important to keep in mind when analysing experiment and innovation pathways. As we will see below, they can create synergy effects as well as tensions in the experimentation process, specifically if some (potentially influent) stakeholders want to “move from a theoretical project to a real territorial project” (as argued by a project manager in Aquitaine).

Territorial leadership and legitimation processes as part of a politically risky experiment

We now examine the way in which the experiment was carried out by the GIP of Aquitaine coastline, first by presenting some of the specific features of this actor. Frequently relying on scientific data from the “Aquitaine Coastline Observatory”, the GIP also develops its own expertise in a number of technical, legal and economic fields related to coastal (risk) management. In addition to this, its members engage in boundary work, translating expert data into operational guidelines, as well as reaching compromises between different stakeholders and policy scales. The GIP actually acts as a bridging organization due to complementarities between the respective personal attributes of its members (committed and strategic, diplomatic) and their competencies (innovative, networking). More broadly, the GIP has emerged as a key actor in the interplay of scales and on the boundaries of different social worlds and is often recognized as such, even if its role is fuzzy and

interpreted differently according to partners and stakeholders. This position as a key player and the projections applied to it are the main features that mark it out as a “boundary entrepreneur” (Rocle 2015; Bergeron et al. 2013).

The experience and resources of the GIP were thus recognized during the candidate selection process of the experiment. The jury remarked its “experience as well as organization and methodological competencies [as] assets for managing the project and local actors”. It is worth noting that by that point, this type of partnership had already been in existence in Aquitaine since the “regional strategy for coastline management” in 2009. Methodological guidelines were structured by the GIP on the basis of existing research into the vulnerability and risk management of coastal systems. Organizationally speaking, there were a regional steering committee, a technical committee and a scientific multidisciplinary committee (coastal engineering, economics, geography, urban and land planning, and law). Engineering consultants were also appointed for technical tasks (coastal engineering) and others for management roles (facilitation of public meetings, scenario approaches), but the GIP always played a central role in delivering expert knowledge as well as “ordering” scientific and institutional uncertainties through “boundary-ordering” discourses so that the diversity of actors could share “an apparently common understanding of uncertainty” (Shackley and Wynne 1996).

Indeed, the discursive dimensions formed a central part of the political work carried out by the GIP to recruit stakeholders to participate in and “play along” with the experiment. The GIP used “coordinative discourses” (Schmidt 2010),⁵ first and foremost by presenting the call for projects in a positive way, referring to it as a “territorial project” and an “opportunity” for local and regional stakeholders. Municipalities generally tended to agree that coastal risks are closely linked with certain socioeconomic trends and issues, and that the call for proposals was indeed an opportunity (particularly for new or “modernized” accommodation or infrastructure features). A discourse coalition was therefore built by the GIP in order to enlist participants in exploiting the “window of opportunity” (Kingdon 1984) opened by the call for proposals. However, this coordinative discourse proved hard to build and maintain. At the first session of a committee, one deputy mayor clearly stated: “we are willing to be pioneers, but not guinea pigs”, shedding light on a critical dimension of experimenting with society, relating to how social actors perceive being the subject of experiments (we will return to this point in the discussion). Local state services were thus placed in awkward situations in relation to the position adopted by the government on certain issues, or a lack of response on others. The GIP asked government officials to “take advantage of the call for projects in order to move off the beaten track” and “not to be dogmatic” about certain assumptions which could provide a valuable learning curve. Several tensions emerged, for example when winter storms with severe damages for experiment sites (see section below) led to a great deal of institutional uncertainty over how to continue collective debates. So that the experiment could continue as normal, the GIP adapted its methodology, liaising with local stakeholders, scientific experts, municipalities and state services, to ensure that experiment deadlines were met.

As part of a “communicative discourse” (Schmidt 2010),⁶ the GIP and elected officials carefully examined the substantive content of ideas relating to “what should and should not

⁵ “The coordinative discourse encompasses the wide range of policy actors engaged in the construction of policy ideas” (Schmidt 2010, p. 3).

⁶ “The communicative discourse encompasses the wide range of political actors who bring the ideas developed in the context of the coordinative discourse to the public for deliberation and legitimization” (Schmidt 2010, p. 3).

be said”, stating that “words are important” (a mayor, during a local steering committee). They presented arguments for framing coastal retreat as a global issue (rather than just a local one), making the security of goods and people a priority, banishing some vocabulary such as “definitive protection” in favour of “active or temporary protection”. Many actors expressed this idea by stating that “in Aquitaine, relocation is not a taboo subject anymore” (interview, Observatory of Aquitaine coastline) and that it can now be discussed with policy actors and populations. In this sense, the experiment has opened a “discursive space” through a meticulous political work combining (coordinative and communicative) political discourses and expertise, as resources for both political-epistemic legitimacy and authority (see in this issue, Voß and Simons).

The GIP now enjoys greater support for some of its former recommendations, such as recognizing coastal erosion on sandy dunes as eligible for state indemnities as it is already the case on rocky coasts. New lines of debate have also been opened, such as the possibility of allowing transfer and retreat of infrastructures located within the protected “100 m strip”, or by changing rules in the French Urban Planning Code. Based on research results adapted and applied by the GIP, as well as experience sharing with UK officers during the experiment, new rules and instruments have been designed to make planned retreat a reality by 2050 (a zoning by-law based on coastal retreat projections, legal instruments allowing residents to continue to live in compulsory purchased houses up until the beginning of relocation...). All in all, the GIP provided 74 proposals to the Ministry and to the national monitoring committee. Some of these recommendations are now appearing in the law proposal tabled in July 2016 by the two MP chairing the monitoring committee (see above).

Local experiment in Lacanau: between long-term policies and emergency actions

Through this local case study, we propose to chart some of the effects, in terms of outputs and outcomes, produced through the experiment process. By means of a scenario approach with backcasting method (moving from a particular future end-point to the present and identifying what policy measures would be necessary to reach that future), two main objectives were set locally. The first one consisted in projecting and simulating a planned retreat implementation by 2050 and to explore all the difficulties that could be encountered, specifically “the problems that could arise if the current legal framework should remain in place” (GIP, Scientific Committee). The second one was to build a consistent scenario up to 2100 and to explore the issue of “institutional feasibility”, namely striking a balance between state bodies, institutional stakeholders and the private sector. To investigate such issues, a participative process was applied, using a focus group method composed of around 30 people, including inhabitants, professionals, and association representatives, requested to be representative of the local population. Initially, rules of engagement were laid down by means of a “participant charter”, in order that all those involved understood and agreed with their roles in the process. At focus group meetings, members were asked to imagine the trajectory and identity of Lacanau in 2050, with planned retreat to be implemented. Alongside these workshops, forums were also organized to keep members of the public up to date with the progress of the project.

The scenario approach was framed not to focus on individual cases, but rather to examine common, collective constraints, dynamics and levers. Although the consultation committee was designed as an aid to decision making, it was also viewed by some as a “good test” to trigger people’s reactions about different options and courses of action.

Both the GIP and Lacanau municipality were pleasantly surprised to note “good” reactions and contributions in the forecasting debate. Many members of the consultation committee asserted new ideas and issues to take into account when imagining Lacanau identity and lifestyle by 2040–2050, such as temporary housing and infrastructure, equity and social justice arguments. Such proposals were well received and trust developed gradually through full and frank debate. Another indirect effect of the experiment is that the municipality of Lacanau is now applying this participative approach in its local urban planning. One of the main explanatory factors appears to be trust among participants who grew throughout this thought experiment, with participants expressing a general satisfaction at the end of the project. We can here hypothesize that the experiment contributed to a social learning process leading to deliberative capacity building, even though it remains to be seen whether this mini-public approach will foster deliberative democratization in a more systemic manner (for a research agenda on that point, see Curato and Böker 2016).

Some lessons can be drawn from two different events occurring in the middle of the experiment. Firstly, winter storms along the Atlantic coast caused very high levels of erosion (up to 30 m in some places). Coastal protection and access structures in Lacanau were destroyed, and emergency repair work was carried out. The GIP tried to convince the state and local authorities responsible for repairs to take extra time to consider the situation and how experiment progress could benefit to this work. Because of emergency measures to be taken, this demand was not received and scenarios were modified to reflect this new deal in the policy trajectory. The limited duration of the experiment almost certainly played an important role in resolving disagreements, particularly due to the willingness of the GIP to meet experiment targets. Secondly, municipal elections occurred during the experiment period. Despite political change in Lacanau and thanks to arrangements between the GIP and the new municipal team, there had been no major change in the experiment process. These events illustrate, on the one hand, how timescales—and the way they are altered by environmental or institutional changes—are key considerations when studying climate policy experiments (see also Nair and Howlett 2016). On the other hand, the GIPs failed attempt to intervene in the coastal repair process serves as a reminder that although bridging organizations can play a central role in experiment processes, they are also constant institutional and political constructions. The changing relationships between central and local governments caused by decentralization are at the heart of this institutional configuration.

Discussion and conclusion

This case study allows some key questions to be re-addressed, relating chiefly to the emerging discourses and dynamics of policy experiments in climate governance and policy innovation. Although numerous experiments which do not take place in the state’s scope of action are an important field of research to be advanced (Hoffman 2011), this case study first confirms that states remain key players in the “new” climate change governance (Jordan and Huitema 2014). While the planned retreat experiment could not be run as a full field trial, due to the immense amount of work which would be necessary to adapt an entire coastal system or city, it did lead actors to conduct inquiries, problematize coastal adaptation issues and consider their future. On this basis, it can be said that the experiment created individual and collective experiences. By stressing some patterns of French state restructuring, we also underlined the strategic part of the experiment, through which the

government seeks to render climate change adaptation governable by the means of local authorities. By the same token, experimentation in France appears to be a form of politics, along with the changing roles of state and local governments in many domains such as urban policies (Béal and Pinson 2015), and hence can be considered as much a tool of government and power as a tool of learning.

This experiment can therefore be seen as both a “governance experiment” and a “strategic experiment” (Bulkeley and Castán Broto 2012). The fact that some actors wished to be seen as “pioneers but not guinea pigs” demonstrates all the potential tensions that can arise between the thirst for learning and innovation and the dynamics of certain strategic interests. We then tracked discursive interactions to analyse the way in which stakeholders appropriated this initiative, and showed how crucial it was to build and maintain discourse coalitions relating to experiment future coastal policy design. In Aquitaine, local actors experienced a collective inquiry, by looking forward, attempting to imagine the future of coastline and lifestyles in 2050, creating new discussion and decision arenas, resolving conflicts, etc. As expressed by many, coastal relocation is no longer a taboo subject in policy discourse. New policy tools and new governance schemes have emerged through cooperation, tensions and learning processes. In Lacanau, most of the participants, including local elected officials, found the experiment to be a positive learning experience. As a result of this, the participatory approach is now part of local urban planning. From this point of view, we can argue that “double-loop learning” (Armitage et al. 2008), i.e., iterative reflection and change about the values and protocols that shape coastal management policies, has occurred, shifting away from more traditional routines.

The policy entrepreneur played a facilitating and catalytic role in this learning process, particularly through its position and ability to play with and around the boundaries of different social worlds (state and local authorities, scientists and policy makers, politicians and the public). Other factors, such as the high commitment of the elected officials and clarification of operating rules (especially in local consultation committees from the beginning of the process), have provided sufficient trust among the participants, highlighting that such participatory approaches benefit from clear guidance and political engagement. Another key aspect seems to have played an enabling role in the learning process, namely the prospective approach. Indeed, along with the quality of its guidance, many stakeholders recognized the positive effect of the exploratory reflection they conducted, allowing coproduction of knowledge and a questioning of critical assumptions about the future of their activity, their city and their lives. Climate governance experiments create opportunities for different actors to connect climate issues with everyday life, as well as a wide range of issues (Cloutier et al. 2015). This kind of exploratory approach can provide greater opportunities for social learning, as long as policy actors continue to build trust through dialogue.

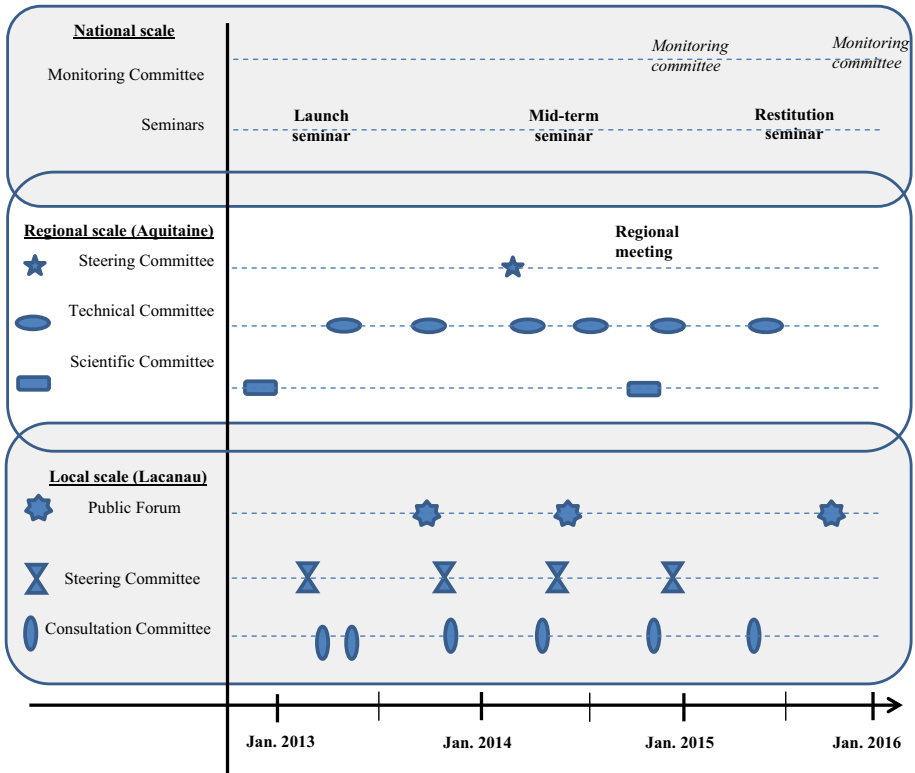
However, social learning as an outcome for the coastal governance system as a whole seems less obvious to our eyes, even if this point necessitates further investigation and hindsight. First, as for any social experimentation, learning and standardizing for new policy goals and instruments is fraught with the diversity and specificity of social configurations (Nair and Howlett 2016). Although social learning occurred at local and regional scales, such learning processes are still questioned at the national scale, mainly due to an important agent turnover and a limited attention to evaluation and evidence making by the Ministry for Environment. Building on the progress of the Paris Agreement following the 21st Conference of the Parties, and driving the future national adaptation plan (2017–2021), different initiatives are underway to strengthen policy tools

dealing with marine erosion through the support of the national coastline management steering committee. But the way these results could be embedded and contribute to greater changes and upscaling processes will still depend on their receiving political support.

Finally, much attention will be needed to understand the potential and overflow effects of policy experiments in the diffusion and institutionalization of new adaptation policies' contents and structures. In this regard, one promising avenue would be to better consider policy experiment feedbacks and subtle effects (Jordan and Matt 2014). Indeed, climate change issues are often suffering from low visibility and intentionality and thus are prone to “blame avoidance” strategies by decision makers (Howlett 2014). For instance, the promise of planned relocation in coastal zones by 2040 or 2050 could, by contrast, reinforce some willingness in favour of protection measures in the meantime, hence avoiding blame by reporting a policy change in the future, even if the costs for coastal protection are becoming unsustainable for many municipalities. However, our case study suggests that the policy experiment contributed to increased visibility of coastal adaptation issues, not only for those directly involved but also for the public at large. It also helped to build trust and social learning in local policy networks where experimentation occurred. These are performative or indirect effects to take into account: such concern on indirect effects could provide new insights into the role of policy experiments to tackle these very issues along with avoiding blame and the growing severity (in terms of scope and of visibility, Howlett 2014) of climate change-related problems.

Acknowledgements For their helpful comments on earlier versions of this paper, the authors would like to thank the anonymous reviewers as well as the participants of the INOGOV workshop held in March 2015 at the Finnish Environment Institute in Helsinki, Finland. The study has been carried out as part of the Cluster of Excellence COTE (Programme of the French National Research Agency, ANR-10-LABX-45) and funded by the Aquitaine Regional Council (PERMALA project, Grant no 201212004004).

Appendix: Timeline of the attended events during the planned retreat experiment



NATIONAL	REGIONAL	LOCAL
Monitoring Committee: 2 MP, 6 state officers, 5 elected officials, 3 employers, 3 environmental NGOs, 8 experts	★ Steering Committee: 7 members of the national board + 13 members of the three experiment sites in Aquitaine	★ Public Forum (average of 150 people): Inhabitants, professionals, elected officials, state services...
Seminars (average of 130 people): All the experiment sites, central directions of the Ministries (Environment; French Overseas; Agriculture), experts...	● Technical Committee (average of 15 people): Consultants, state services, municipalities ■ Scientific Committee: average of 12 researchers and experts	⌘ Steering Committee (average of 15 people): State services, local officials, consultants ● Consultation Committee (average of 25 people): Inhabitants, associations, professionals

The Public Interest Group of Aquitaine coastline participated in and served as the main link between all these events. With the exception of the two national monitoring committees, all the attended events were recorded, along with note taking, and half were fully transcribed.

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